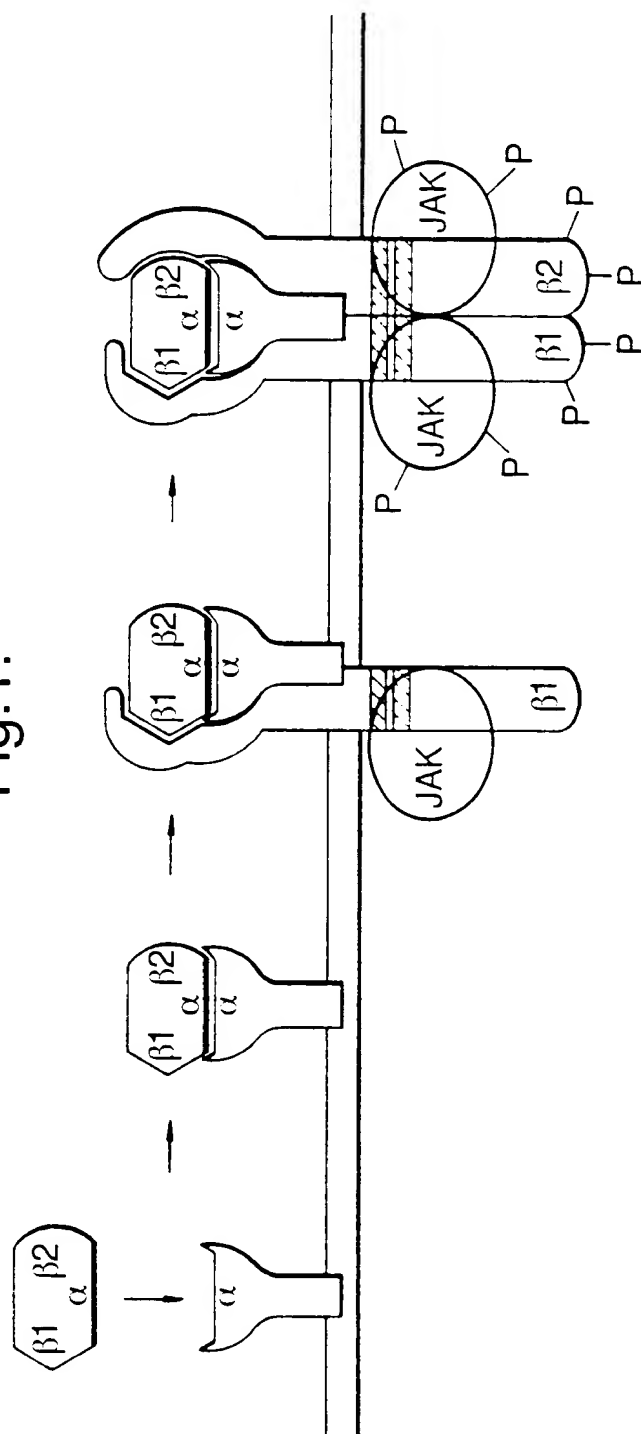


1/63

Fig.1.



2/63

Fig.2.

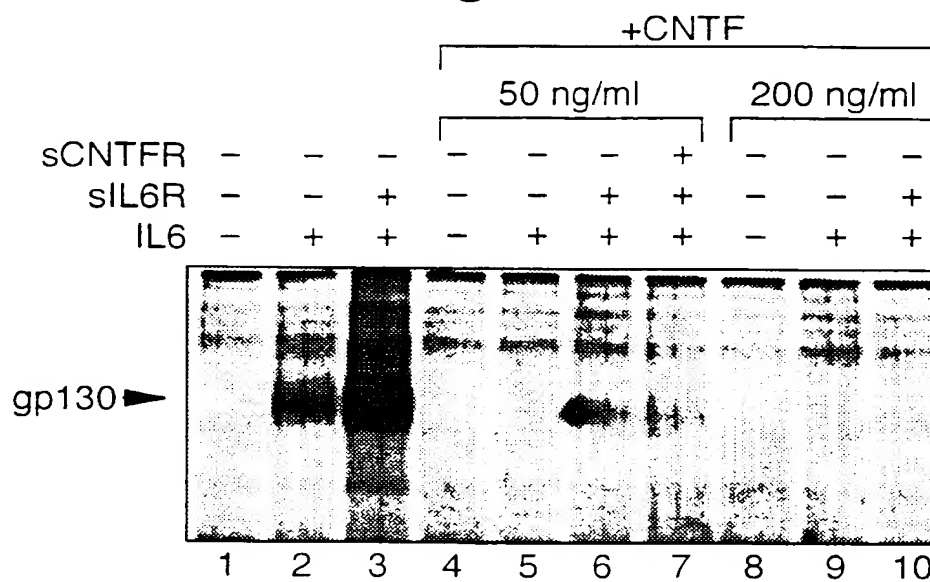
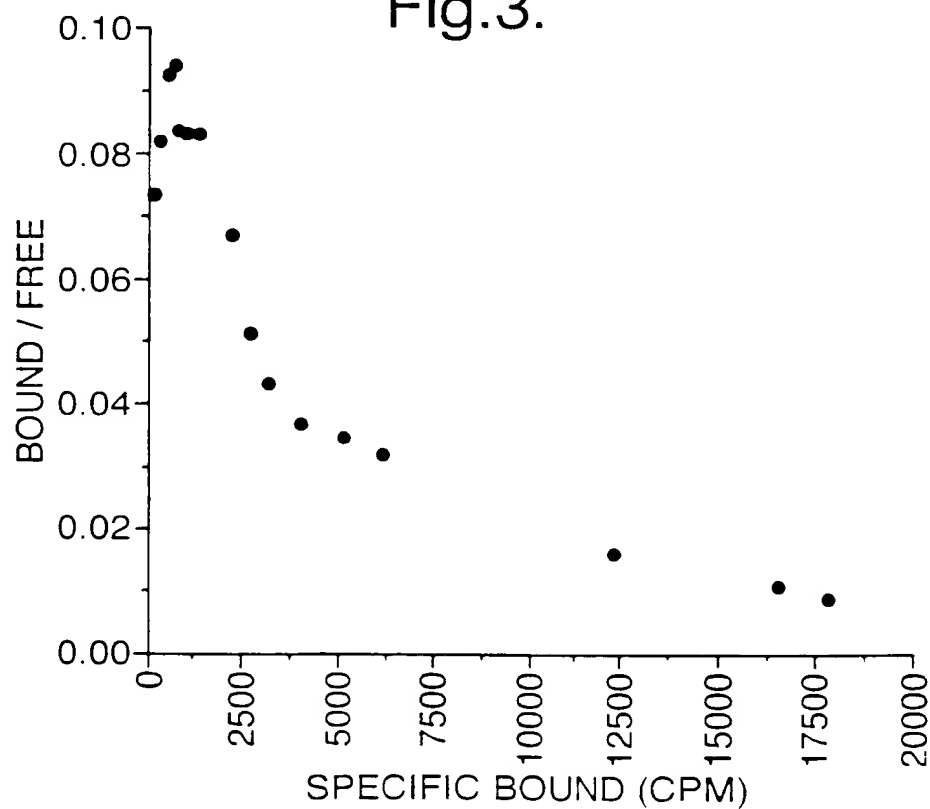


Fig.3.



3/63

## Fig.4.

Amino acid sequence of human gp130-Fc-His<sub>6</sub>

Sequence Range: 1 to 861

10	20	30	40	50	60
*	*	*	*	*	*
MVTLQTWVQALFIFLTES	TGELLDPCGYISPESPVVQL	HSNFTAVCVLKEKCMDYFHV			
70	80	90	100	110	120
*	*	*	*	*	*
NANYIVWKTNHFTIPKEQYT	IINRTASSVTFTDIASLNIQ	LTCNILTFGQLEQNVEYGITI			
130	140	150	160	170	180
*	*	*	*	*	*
ISGLPPEKPKNLSCIVNEGK	KMRCEWDGGRETHLETNFTL	KSEWATHKFADCKAKRDTPT			
190	200	210	220	230	240
*	*	*	*	*	*
SCTVDYSTVYFVNIEVWVEA	ENALGKVTSDHINFDPVYKV	KPNPPHNLSVINSEELSSIL			
250	260	270	280	290	300
*	*	*	*	*	*
KLTWTNPSIKSVIILKYNIQ	YRTKDASTWSQIPPEDTAST	RSSFTVQDLKPFTEYVFRIR			
310	320	330	340	350	360
*	*	*	*	*	*
CMKEDGKGYWSDWSEEASGI	TYEDRPSKAPSFWKIDPSH	TQGYRTVQLVWKTLPPEAN			
370	380	390	400	410	420
*	*	*	*	*	*
GKILDYEVTLTRWKSHLQNY	TVNATKLTVNLTNDRYLATL	TVRNLVGKSDDAAVLTIPACD			
430	440	450	460	470	480
*	*	*	*	*	*
FQATHPVMDLKAFPKDNMLW	VEWTTTPRESVKYILEWCVL	SDKAPCITDWQQEDGTVHRT			
490	500	510	520	530	540
*	*	*	*	*	*
YLRGNLAESKCYLITVTPVY	ADGPGSPESIKAYLKQAPPS	KGPTVVRTKKVGKNEAVLEWD			
550	560	570	580	590	600
*	*	*	*	*	*
QLPVDVQNGFIRNYTIFYRT	IIGNETAVNVDSSTHEYTLS	SLTSDTLYMVRMAAYTDEGG			
610	620	630	640	650	660
*	*	*	*	*	*
KDGPEFTFTTPKFAQGEIES	<u>GEPKSCDKTHTCPPCPAPEL</u>	<u>LGGPSVFLFPPKPKDTLMIS</u>			
670	680	690	700	710	720
*	*	*	*	*	*
<u>RTPEVTCVVVDVSHEDPEVK</u>	<u>FNWYVDGVEVHNAKTKPREE</u>	<u>OYNSTYRVVSVLTVLHODWL</u>			
730	740	750	760	770	780
*	*	*	*	*	*

4/63

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NGKEYKCKVSNKALPAPIEK TISKAKGQPREPOVYTLPPS RDELTKNOVSLTCLVKGFYP
      790          800          810          820          830          840
      *            *            *            *            *            *
SDIAVEWESNGOPENNYKTT PPVLDSGSGFFLYSKLTVDK SRWOOGNVFSCSVMHEALHN
      850          860
      *            *
HYTOKSLSLSPGKHHHHHH•

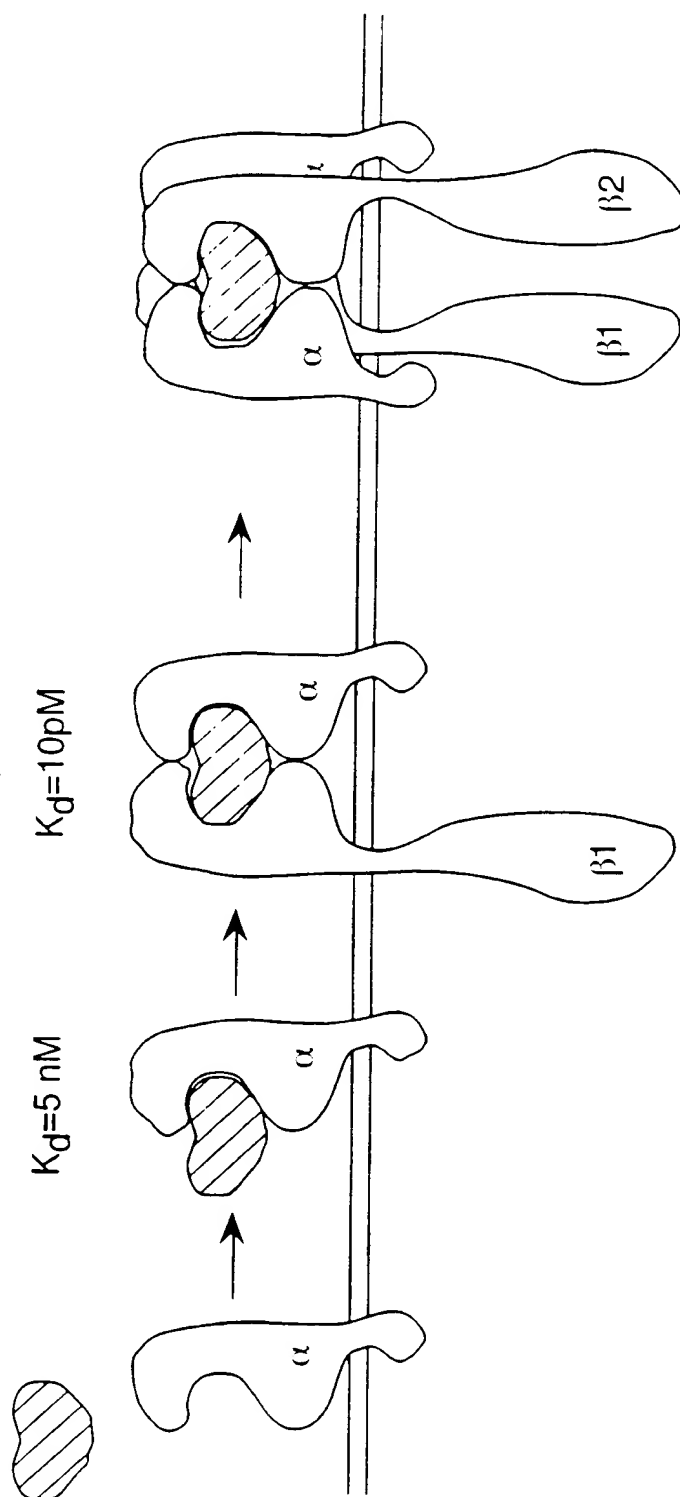
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The amino acid sequence of human IL-6R $\alpha$ -Fc

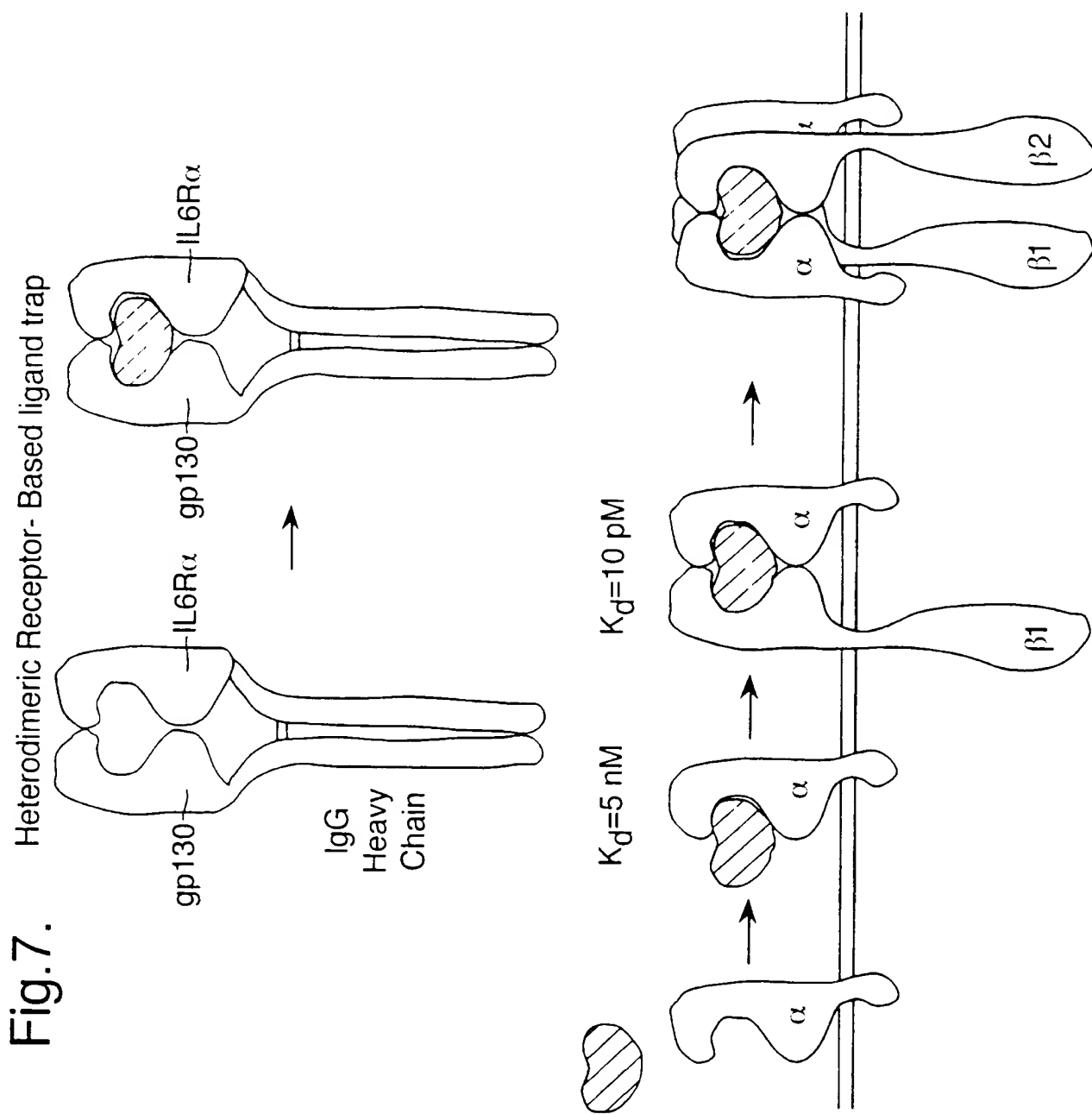
10 *	20 *	30 *	40 *	50 *	60 *
MVAVGCALLAALLAAPGAAL	APRRCPAQEVARGVLTSLPG	DSVTLTCPGVEPEDNATVHW			
70 *	80 *	90 *	100 *	110 *	120 *
VLRKPAAGSHPSRWAGMGRR	LLLRSVQLHDSGNYSCYRAG	RPAGTVHLLVDVPPEEPQLS			
130 *	140 *	150 *	160 *	170 *	180 *
CFRKSPLSNVVCEWGPRSTP	SLTTKAVLLVRKFQNSPAED	FQEPQYSQESQKFSCQLAV			
190 *	200 *	210 *	220 *	230 *	240 *
PEGDSSFYIVSMCVASSVGS	KFSKTQTFQGCILQPDPPA	NITVTAVARNPRWLSVTWQD			
250 *	260 *	270 *	280 *	290 *	300 *
PHSWNSSFYRLRFELRYRAE	RSKTFTTWMVKDLQHHCVIH	DAWSGLRHVVQLRAQEEFGQ			
310 *	320 *	330 *	340 *	350 *	360 *
GEWSEWSPEAMGTPWTESRS	PPAENEVSTPMQALTTNKDD	DNILFRDSANATSLPVQDAG			
370 *† †	380 *	390 *	400 *	410 *	420 *
<u>EPKSCDKTHTCPPCAPELL</u>	<u>GGPSVFLFPKPKDTLMISR</u>	<u>TPEVTCVVVDVSHEDPEVKE</u>			
430 *	440 *	450 *	460 *	470 *	480 *
<u>NWYVDGVEVHNAKTKPREEQ</u>	<u>YNSTYRVVSVLTVLHODWLN</u>	<u>GKEYKCKVSNKALPAPIEKT</u>			
490 *	500 *	510 *	520 *	530 *	540 *
<u>ISKAKGOPREPOVYTLPPSR</u>	<u>DELTKNOVSLTCLVKGFYPS</u>	<u>DIAVEWESNGOPENNYKTP</u>			
550 *	560 *	570 *	580 *	590 *	
<u>PVLDSGDGSFFLYSKLTVDKS</u>	<u>RWOOGNVFSCSVMH</u>	<u>EAALHNH</u>	<u>YTOKSLSLSPGK</u>		

5/63

Fig. 6.



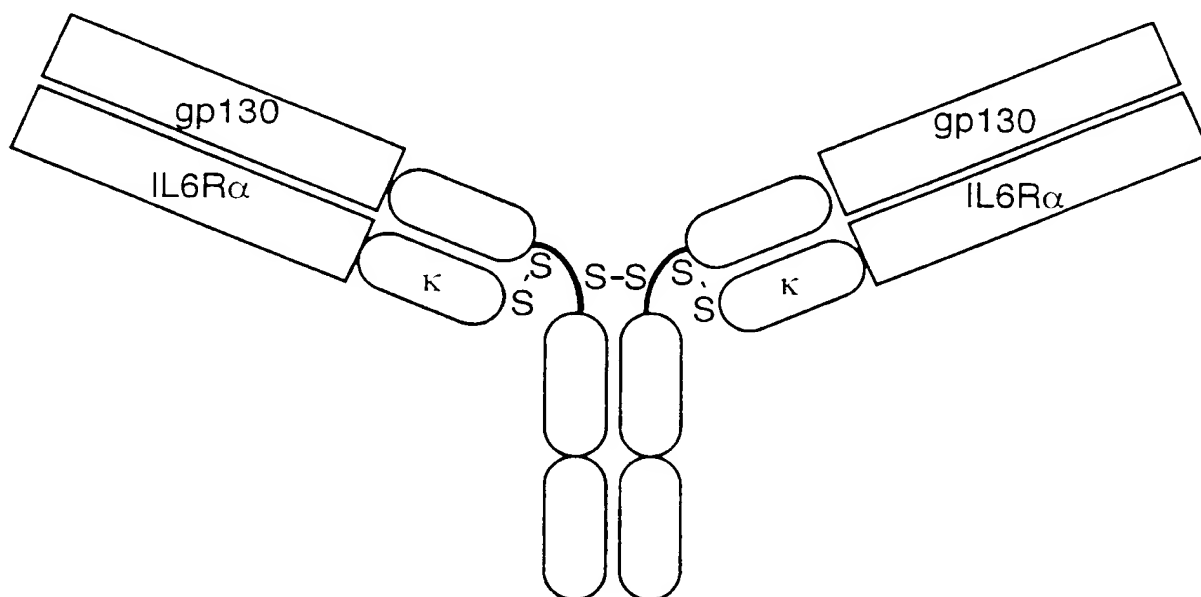
6/63



7/63

Fig.8.

Immunoglobulin Heavy/Light Chain receptor Fusions



8/63

Fig.9.

## Amino acid sequence of gp130-Cy1

Sequence Range: 1 to 952

10	20	30	40	50	60
*	*	*	*	*	*
MVTLQTWVVQALFIFLTES	TGELLDPGCGYISPESPVVQL	HSNFTAVCVLKEKCMDYFHV			
70	80	90	100	110	120
*	*	*	*	*	*
NANYIVWKTNHFTIPKEQYT	IINRTASSVTFTDIASLNIQ	LTCNILTFGQLEQNVIYGITI			
130	140	150	160	170	180
*	*	*	*	*	*
ISGLPPEKPKNLSCIVNEGK	KMRCEWDGGRETHLETNFTL	KSEWATHKFADCKAKRDTPT			
190	200	210	220	230	240
*	*	*	*	*	*
SCTVDYSTVYFVNIEVWVEA	ENALGKVTSDHINFDPVYKV	KPNPPHNLSVINSEELSSIL			
250	260	270	280	290	300
*	*	*	*	*	*
KLTWTNPSIKSVIILKYNIQ	YRTKDASTWSQIPPEDTAST	RSSFTVQDLKPFTEYVFRIR			
310	320	330	340	350	360
*	*	*	*	*	*
CMKEDGKGYWSDWSEEASGI	TYEDRPSKAPSFYWKIDPSH	TQGYRTVQLVWKTLPPEAN			
370	380	390	400	410	420
*	*	*	*	*	*
GKILDYEVTLTRWKSHLQNY	TVNATKLTVNLTNDRYLATL	TVRNLVGKSDAAVLTIPACD			
430	440	450	460	470	480
*	*	*	*	*	*
FQATHPVMDLKAFPKDNMLW	VEWTTTPRESVKKYILEWCVL	SDKAPCITDWQQEDGTVHRT			
490	500	510	520	530	540
*	*	*	*	*	*
YLRGNLAESKCYLITVTPVY	ADGPGSPESIKAYLKQAPPS	KGPTVVRTKKVGKNEAVLEWD			
550	560	570	580	590	600
*	*	*	*	*	*
QLPVDVQNGFIRNYTIFYRT	IIGNETAVNVDSHTEYTLS	SLTSDTLYMVRMAAYTDEGG			
610	620	630	640	650	660
*	*	*	*	*	*
KDGPEFTFTTPKFAQGEIES	GASTKGPSVEPLAPSSKSTS	GGTAALGCLVKDYFPEPVTV			
670	680	690	700	710	720
*	*	*	*	*	*
SWNSGALTSGVHTFPAVLQS	SGLYSLSSVTVPSSSLGTO	TYICNVNHKPSNTKVDKKVE			
730	740	750	760	770	780
*	*	*	*	*	*
PKSCDKTHTCPPCPAPELLG	GPSVELFPKPKDLMISRT	PEVTCVVVDVSHEDPEVKFN			



9/63

## Fig.9 (Cont).

790	800	810	820	830	840
*	*	*	*	*	*
<u>WYVDGVEVHNAKTKPREEOY NSTYRVVSVLTVLHODWLNG KEYKCKVSNKALPAPIEKTI</u>					
850	860	870	880	890	900
*	*	*	*	*	*
<u>SKAKGQPREPOVYTLPPSRD ELTKNOVSLTCLVKGFYPSD IAVEWESNGOPENNYKTTTP</u>					
910	920	930	940	950	
*	*	*	*	*	
<u>VLDSGDGSFFLYSKLTVDKSR WOOGNVFSCSVMHEALHNY TOKSLSLSPGK*</u>					

## Fig.10.

## Amino acid sequence of gp130Δ3fibro

Sequence Range: 1 to 332

10	20	30	40	50	60
*	*	*	*	*	*
MVTLQTWVQALFIFLTES TGELLDPCGYISPESPVVQL HSNFTAVCVLKEKCMDYFHV					
70	80	90	100	110	120
*	*	*	*	*	*
NANYIVWKTNHFTIPKEQYT IINRTASSVTFTDIASLNIQ LTCNILTFGQLEQNVYGITI					
130	140	150	160	170	180
*	*	*	*	*	*
ISGLPPEKPKNLSCIVNEGK KMRCEWDGGRETHLETNFTL KSEWATHKFADCKAKRDTPT					
190	200	210	220	230	240
*	*	*	*	*	*
SCTVDYSTVYFVNIEVWVEA ENALGKVTSDHINFDPVYKV KPNPPHNLSVINSEELSSIL					
250	260	270	280	290	300
*	*	*	*	*	*
KLTWTNPSIKSVIILKYNIQ YRTKDASTWSQIPPEDTAST RSSFTVQDLKPFTEYVFRIR					
310	320	330			
*	*	*			
CMKEDGKGYWSDWSEEASGI TYEDRPSKAPSG					

10/63

## Fig.11.

## Amino acid sequence of J-CH1

Sequence Range: 1 to 121

10	20	30	40	50	60
*	*	*	*	*	*
<u>SGGQGTLVTVSSASTKGPSV FPLAPSSKSTSGGTAALGCL VKDYFPEPVTVSWNSGALTS</u>					
70	80	90	100	110	120
*	*	*	*	*	*
<u>GVHTFPAVLOSSGLYSLSSV VTPVSSSLGTOTYICNVNHK PSNTKVDKKVEPKSCDKTHT*</u>					

## Fig.12.

## Amino acid sequence of Cγ4

Sequence Range: 1 to 330

10	20	30	40	50	60
*	*	*	*	*	*
SGASTKGPSVFPLAPCSRST SESTAALGCLVKDYFPEPVT VSWNSGALTSGVHTFPAVLQ					
70	80	90	100	110	120
*	*	*	*	*	*
SSGLYSLSSVVTVPSSSLGT KTYTCNVDPKPSNTKVDKRV ESKYGPPCPSCPAPEFLGGP					
130	140	150	160	170	180
*	*	*	*	*	*
SVFLFPPKPKDTLMISRTPE VTCVVVDVSQEDPEVQFNWY VDGVEVHNAKTKPREEQFN					
190	200	210	220	230	240
*	*	*	*	*	*
TYRVVSVLTVLHQDWLNGKE YKCKVSNKGLPSSIEKTISK AKGQPREPQVYTLPPSQEEM					
250	260	270	280	290	300
*	*	*	*	*	*
TKNQVSLTCLVKGFYPSDIA VEWESNGQPENNYKTTPPVL DSDGSFFFLYSRLTVDKSRWQ					
310	320	330			
*	*	*			
EGNVFSCSVMEALHNHYTQ KSLSLSLGK*					

11/63

## Fig.13.

Amino acid sequence of  $\kappa$ -domain

Sequence Range: 1 to 108

10	20	30	40	50	60
*	*	*	*	*	*
SGTVAAPSVFIFPPSDEQLK SGTASVVCLLNNFYPREAKV QWKVDNALQSGNSQESVTEQ					
70	80	90	100		
*	*	*	*		
DSKDSTYSLSSTLTLSKADY EKHKVYACEVTHQGLSSPVT KSFNRGEC*					

## Fig.14.

Amino acid sequence of  $\lambda$ -domain:

Sequence Range: 1 to 107

10	20	30	40	50	60
*	*	*	*	*	*
SGPKAAPSVTLFPPSSEELQ ANKATLVCLISDFYPGAVTV AWKADSSPVKAGVETTTPSK					
70	80	90	100		
*	*	*	*		
QSNNKYAASSYLSLTPEQWK SHRSYSCQVTHEGSTVEKTV APTECS*					

## Fig.15.

12/63

Amino acid sequence of the soluble IL-6R $\alpha$  domain

Sequence Range: 1 to 360

10	20	30	40	50	60
*	*	*	*	*	*
MVAVGCALLAALLAAPGAAL	APRRCPAQEVARGVLTSLPG	DSVTLTCPGVEPEDNATVHW			
70	80	90	100	110	120
*	*	*	*	*	*
VLRKPAAGSHPSRWAGMGRR	LLLRSVQLHDSGNYSCYRAG	RPAGTVHLLVDVPPEEPQLS			
130	140	150	160	170	180
*	*	*	*	*	*
CFRKSPLSNVVCEWGPRSTP	SLTTKAVLLVRKFQNSPAED	FQEPQCYSQESQKFSCQLAV			
190	200	210	220	230	240
*	*	*	*	*	*
PEGDSSFYIVSMCVASSVGS	KFSKTQTFQCGILQPDPPA	NITVTAVARNPRWLSVTWQD			
250	260	270	280	290	300
*	*	*	*	*	*
PHSWNSSFYRLRFELRYRAE	RSKTFTTWVVKDLQHHCVIH	DAWSGLRHVVQLRAQEFGQ			
310	320	330	340	350	360
*	*	*	*	*	*
GEWSEWSPEAMGTPWTESRS	PPAENEVSTPMQALTTNKDD	DNILFRDSANATSLPVQDAG			

## Fig.16.

Amino acid sequence of the soluble IL-6k $\alpha$ 313 domain

Sequence Range: 1 to 315

10	20	30	40	50	60
*	*	*	*	*	*
MVAVGCALLAALLAAPGAAL	APRRCPAQEVARGVLTSLPG	DSVTLTCPGVEPEDNATVHW			
70	80	90	100	110	120
*	*	*	*	*	*
VLRKPAAGSHPSRWAGMGRR	LLLRSVQLHDSGNYSCYRAG	RPAGTVHLLVDVPPEEPQLS			
130	140	150	160	170	180
*	*	*	*	*	*
CFRKSPLSNVVCEWGPRSTP	SLTTKAVLLVRKFQNSPAED	FQEPQCYSQESQKFSCQLAV			
190	200	210	220	230	240
*	*	*	*	*	*
PEGDSSFYIVSMCVASSVGS	KFSKTQTFQCGILQPDPPA	NITVTAVARNPRWLSVTWQD			
250	260	270	280	290	300
*	*	*	*	*	*
PHSWNSSFYRLRFELRYRAE	RSKTFTTWVVKDLQHHCVIH	DAWSGLRHVVQLRAQEFGQ			
310					
*					
GEWSEWSPEAMGTTG					

13/63

Fig.17.

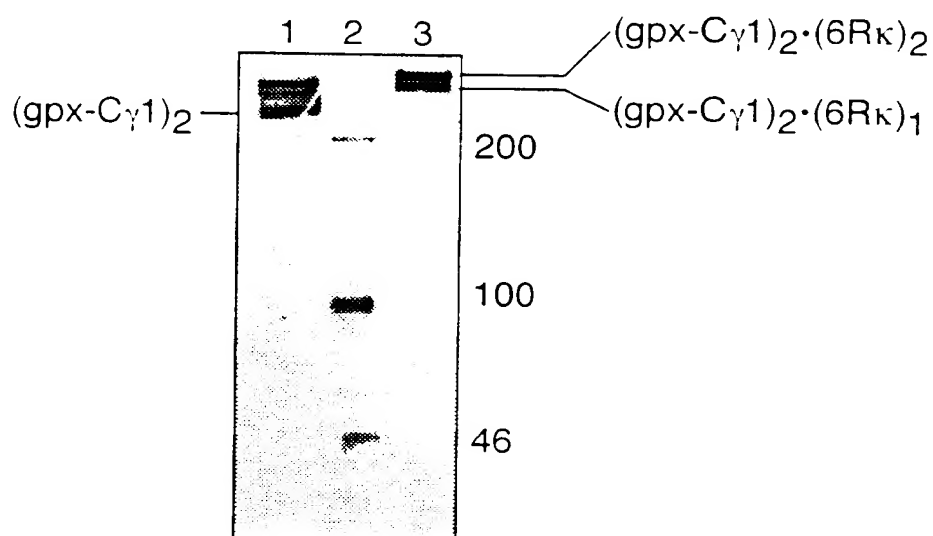


Fig.18.

IL-6 Dissociates Slowly from the Ligand Trap

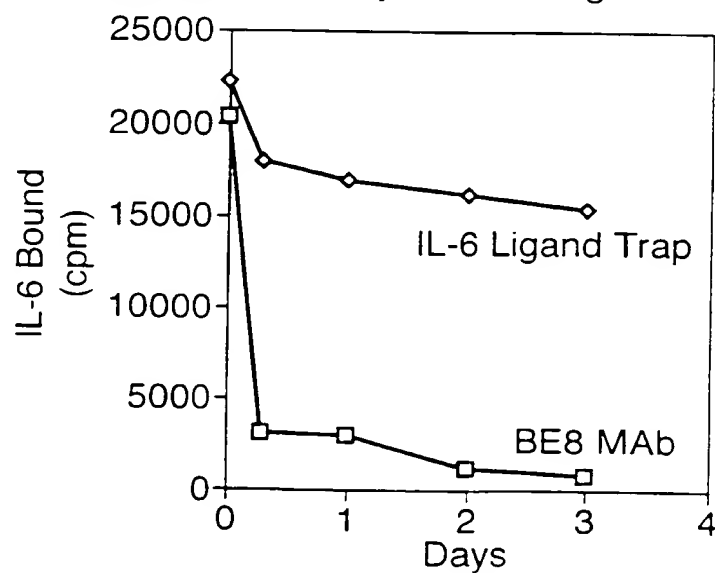


Fig. 19A.

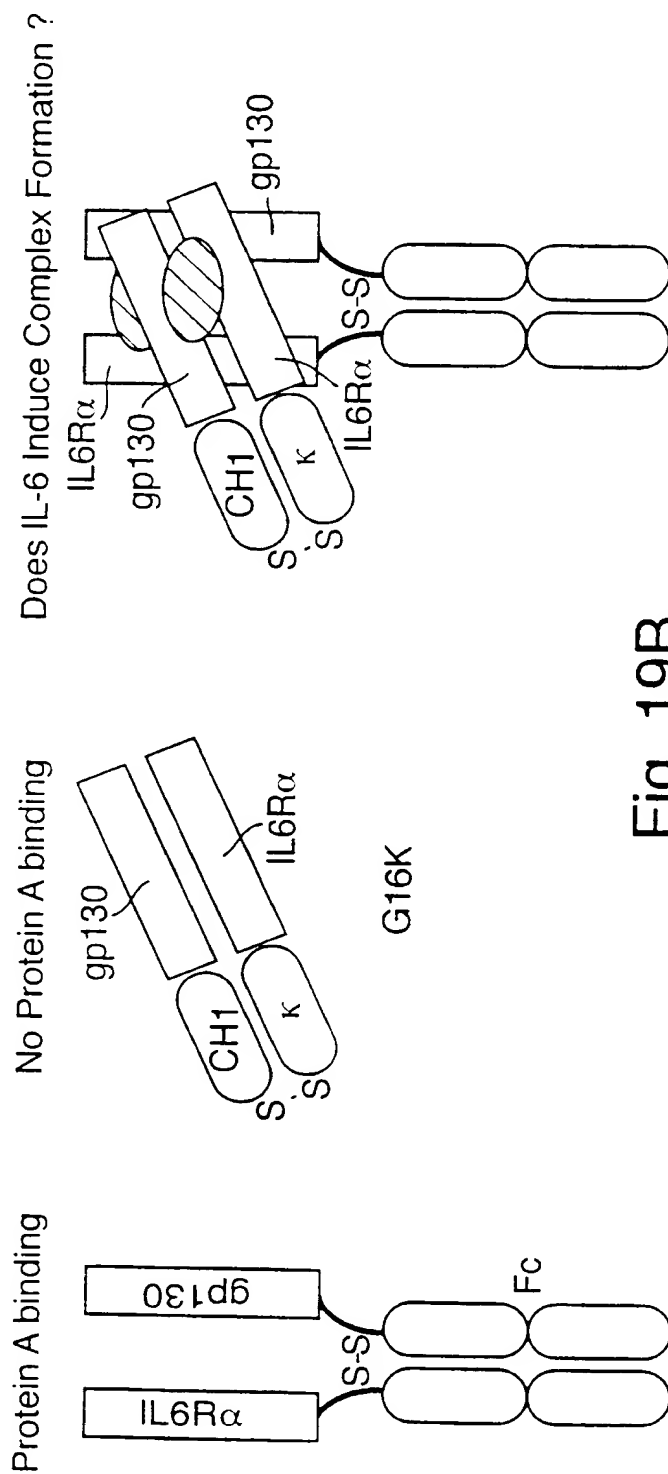
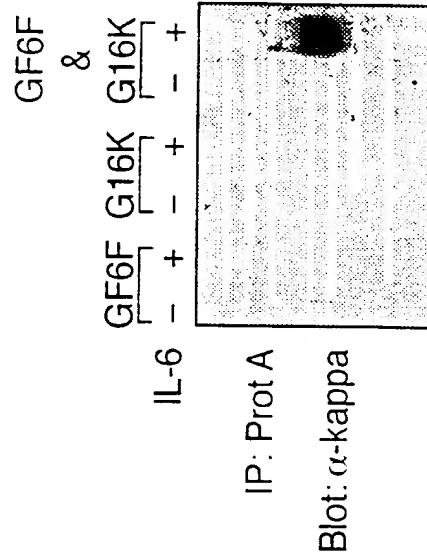
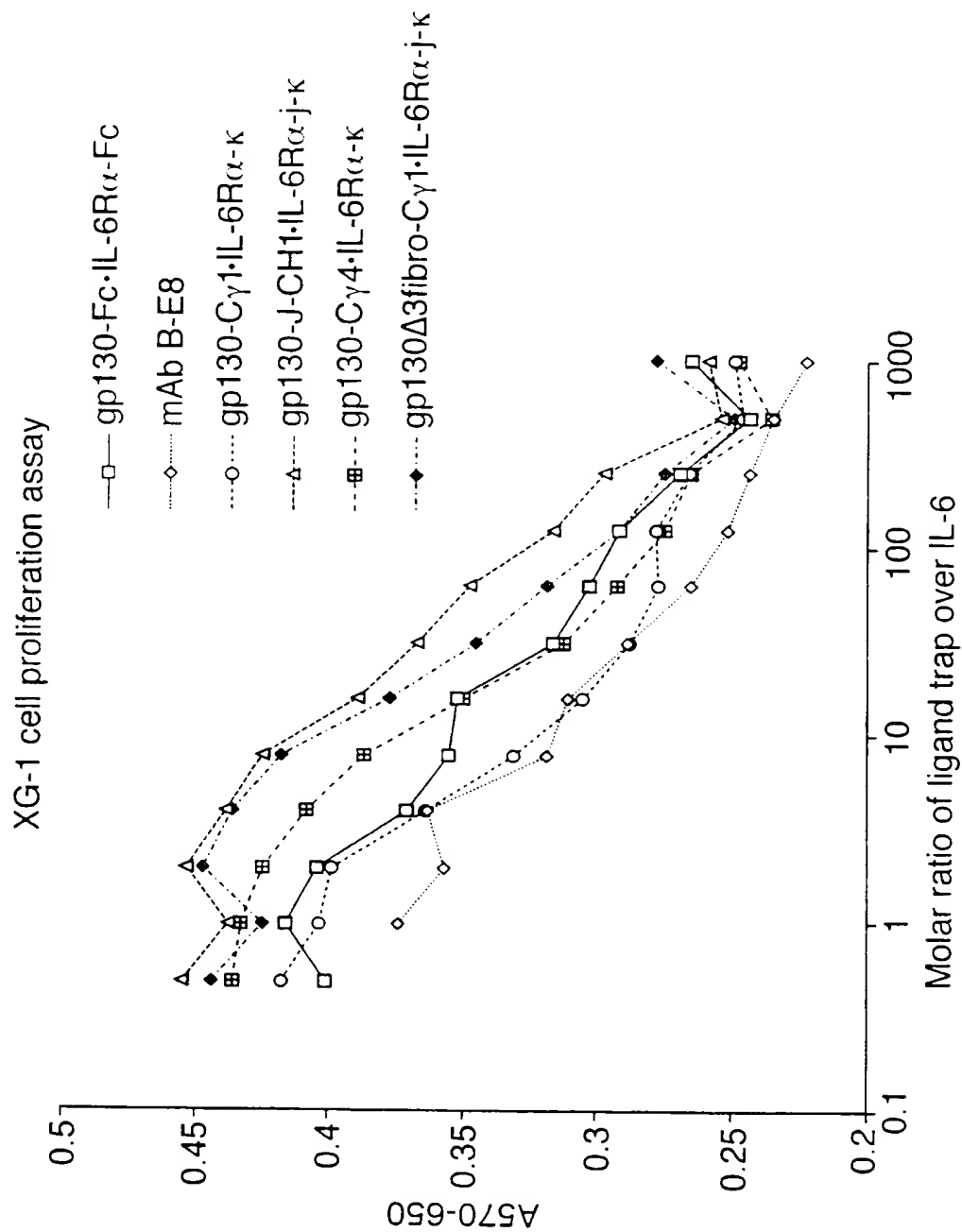


Fig. 19B.



15/63

Fig.20.



## Fig.21A.

16/63

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      10      20      30      40
      *      *      *      *
ATG GTG AAG CCA TCA TTA CCA TTC ACA TCC CTC TTA TTC CTG CAG CTG
Met Val Lys Pro Ser Leu Pro Phe Thr Ser Leu Leu Phe Leu Gln Leu>

50      60      70      80      90
      *      *      *      *      *
CCC CTG CTG GGA GTG GGG CTG AAC ACG ACA ATT CTG ACG CCC AAT GGG
Pro Leu Leu Gly Val Gly Leu Asn Thr Thr Ile Leu Thr Pro Asn Gly>

100      110      120      130      140
      *      *      *      *      *
AAT GAA GAC ACC ACA GCT GAT TTC TTC CTG ACC ACT ATG CCC ACT GAC
Asn Glu Asp Thr Thr Ala Asp Phe Phe Leu Thr Thr Met Pro Thr Asp>

150      160      170      180      190
      *      *      *      *      *
TCC CTC AGT GTT TCC ACT CTG CCC CTC CCA GAG GTT CAG TGT TTT GTG
Ser Leu Ser Val Ser Thr Leu Pro Leu Pro Glu Val Gln Cys Phe Val>

200      210      220      230      240
      *      *      *      *      *
TTC AAT GTC GAG TAC ATG AAT TGC ACT TGG AAC AGC AGC TCT GAG CCC
Phe Asn Val Glu Tyr Met Asn Cys Thr Trp Asn Ser Ser Ser Glu Pro>

250      260      270      280
      *      *      *      *
CAG CCT ACC AAC CTC ACT CTG CAT TAT TGG TAC AAG AAC TCG GAT AAT
Gln Pro Thr Asn Leu Thr Leu His Tyr Trp Tyr Lys Asn Ser Asp Asn>

290      300      310      320      330
      *      *      *      *      *
GAT AAA GTC CAG AAG TGC AGC CAC TAT CTA TTC TCT GAA GAA ATC ACT
Asp Lys Val Gln Lys Cys Ser His Tyr Leu Phe Ser Glu Glu Ile Thr>

340      350      360      370      380
      *      *      *      *      *
TCT GGC TGT CAG TTG CAA AAA AAG GAG ATC CAC CTC TAC CAA ACA TTT
Ser Gly Cys Gln Leu Gln Lys Lys Glu Ile His Leu Tyr Gln Thr Phe>

390      400      410      420      430
      *      *      *      *      *
GTT GTT CAG CTC CAG GAC CCA CGG GAA CCC AGG AGA CAG GCC ACA CAG
Val Val Gln Leu Gln Asp Pro Arg Glu Pro Arg Arg Gln Ala Thr Gln>

440      450      460      470      480
      *      *      *      *      *
ATG CTA AAA CTG CAG AAT CTG GTG ATC CCC TGG GCT CCA GAG AAC CTA
Met Leu Lys Leu Gln Asn Leu Val Ile Pro Trp Ala Pro Glu Asn Leu>

490      500      510      520
      *      *      *      *
ACA CTT CAC AAA CTG AGT GAA TCC CAG CTA GAA CTG AAC TGG AAC AAC
Thr Leu His Lys Leu Ser Glu Ser Gln Leu Glu Leu Asn Trp Asn Asn>

530      540      550      560      570
      *      *      *      *      *
AGA TTC TTG AAC CAC TGT TTG GAG CAC TTG GTG CAG TAC CGG ACT GAC
Arg Phe Leu Asn His Cys Leu Glu His Leu Val Gln Tyr Arg Thr Asp>

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JUN 2000

Fig.21B.

17/63

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580      590      600      610      620
*      *      *      *      *
TGG GAC CAC AGC TGG ACT GAA CAA TCA GTG GAT TAT AGA CAT AAG TTC
Trp Asp His Ser Trp Thr Glu Gln Ser Val Asp Tyr Arg His Lys Phe>

630      640      650      660      670
*      *      *      *      *
TCC TTG CCT AGT GTG GAT GGG CAG AAA CGC TAC ACG TTT CGT GTT CGG
Ser Leu Pro Ser Val Asp Gly Gln Lys Arg Tyr Thr Phe Arg Val Arg>

680      690      700      710      720
*      *      *      *      *
AGC CGC TTT AAC CCA CTC TGT GGA AGT GCT CAG CAT TGG AGT GAA TGG
Ser Arg Phe Asn Pro Leu Cys Gly Ser Ala Gln His Trp Ser Glu Trp>

730      740      750      760
*      *      *      *      *
AGC CAC CCA ATC CAC TGG GGG AGC AAT ACT TCA AAA GAG AAC GCG TCG
Ser His Pro Ile His Trp Gly Ser Asn Thr Ser Lys Glu Asn Ala Ser>

770      780      790      800      810
*      *      *      *      *
TCT GGG AAC ATG AAG GTC CTG CAG GAG CCC ACC TGC GTC TCC GAC TAC
Ser Gly Asn Met Lys Val Leu Gln Glu Pro Thr Cys Val Ser Asp Tyr>

820      830      840      850      860
*      *      *      *      *
ATG AGC ATC TCT ACT TGC GAG TGG AAG ATG AAT GGT CCC ACC AAT TGC
Met Ser Ile Ser Thr Cys Glu Trp Lys Met Asn Gly Pro Thr Asn Cys>

870      880      890      900      910
*      *      *      *      *
AGC ACC GAG CTC CGC CTG TTG TAC CAG CTG GTT TTT CTG CTC TCC GAA
Ser Thr Glu Leu Arg Leu Leu Tyr Gln Leu Val Phe Leu Leu Ser Glu>

920      930      940      950      960
*      *      *      *      *
GCC CAC ACG TGT ATC CCT GAG AAC AAC GGA GGC GCG GGG TGC GTG TGC
Ala His Thr Cys Ile Pro Glu Asn Asn Gly Gly Ala Gly Cys Val Cys>

970      980      990      1000
*      *      *      *      *
CAC CTG CTC ATG GAT GAC GTG GTC AGT GCG GAT AAC TAT ACA CTG GAC
His Leu Leu Met Asp Asp Val Val Ser Ala Asp Asn Tyr Thr Leu Asp>

1010      1020      1030      1040      1050
*      *      *      *      *
CTG TGG GCT GGG CAG CAG CTG CTG TGG AAG GGC TCC TTC AAG CCC AGC
Leu Trp Ala Gly Gln Gln Leu Leu Trp Lys Gly Ser Phe Lys Pro Ser>

1060      1070      1080      1090      1100
*      *      *      *      *
GAG CAT GTG AAA CCC AGG GCC CCA GGA AAC CTG ACA GTT CAC ACC AAT
Glu His Val Lys Pro Arg Ala Pro Gly Asn Leu Thr Val His Thr Asn>

1110      1120      1130      1140      1150
*      *      *      *      *
GTC TCC GAC ACT CTG CTG CTG ACC TGG AGC AAC CCG TAT CCC CCT GAC
Val Ser Asp Thr Leu Leu Leu Thr Trp Ser Asn Pro Tyr Pro Pro Asp>

1160      1170      1180      1190      1200
*      *      *      *      *

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## Fig.21C.

18/63

AAT TAC CTG TAT AAT CAT CTC ACC TAT GCA GTC AAC ATT TGG AGT GAA  
 Asn Tyr Leu Tyr Asn His Leu Thr Tyr Ala Val Asn Ile Trp Ser Glu>

1210 1220 1230 1240  
 \* \* \* \* \*  
 AAC GAC CCG GCA GAT TTC AGA ATC TAT AAC GTG ACC TAC CTA GAA CCC  
 Asn Asp Pro Ala Asp Phe Arg Ile Tyr Asn Val Thr Tyr Leu Glu Pro>

1250 1260 1270 1280 1290  
 \* \* \* \* \*  
 TCC CTC CGC ATC GCA GCC AGC ACC CTG AAG TCT GGG ATT TCC TAC AGG  
 Ser Leu Arg Ile Ala Ala Ser Thr Leu Lys Ser Gly Ile Ser Tyr Arg>

1300 1310 1320 1330 1340  
 \* \* \* \* \*  
 GCA CGG GTG AGG GCC TGG GCT CAG TGC TAT AAC ACC ACC TGG AGT GAG  
 Ala Arg Val Arg Ala Trp Ala Gln Cys Tyr Asn Thr Thr Trp Ser Glu>

1350 1360 1370 1380 1390  
 \* \* \* \* \*  
 TGG AGC CCC AGC ACC AAG TGG CAC AAC TCC TAC AGG GAG CCC TTC GAG  
 Trp Ser Pro Ser Thr Lys Trp His Asn Ser Tyr Arg Glu Pro Phe Glu>

1400 1410 1420 1430 1440  
 \* \* \* \* \*  
 CAG TCC GGA GAC AAA ACT CAC ACA TGC CCA CCG TGC CCA GCA CCT GAA  
 Gln Ser Gly Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu>

1450 1460 1470 1480  
 \* \* \* \* \*  
 CTC CTG GGG GGA CCG TCA GTC TTC CTC TTC CCC CCA AAA CCC AAG GAC  
 Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp>

1490 1500 1510 1520 1530  
 \* \* \* \* \*  
 ACC CTC ATG ATC TCC CGG ACC CCT GAG GTC ACA TGC GTG GTG GTG GAC  
 Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp>

1540 1550 1560 1570 1580  
 \* \* \* \* \*  
 GTG AGC CAC GAA GAC CCT GAG GTC AAG TTC AAC TGG TAC GTG GAC GGC  
 Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly>

1590 1600 1610 1620 1630  
 \* \* \* \* \*  
 GTG GAG GTG CAT AAT GCC AAG ACA AAG CCG CGG GAG GAG CAG TAC AAC  
 Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn>

1640 1650 1660 1670 1680  
 \* \* \* \* \*  
 AGC ACG TAC CGT GTG GTC AGC GTC CTC ACC GTC CTG CAC CAG GAC TGG  
 Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp>

1690 1700 1710 1720  
 \* \* \* \* \*  
 CTG AAT GGC AAG GAG TAC AAG TGC AAG GTC TCC AAC AAA GCC CTC CCA  
 Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro>

1730 1740 1750 1760 1770  
 \* \* \* \* \*  
 GCC CCC ATC GAG AAA ACC ATC TCC AAA GCC AAA GGG CAG CCC CGA GAA  
 Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu>

19/63

Fig.21D.

1780		1790		1800		1810		1820
*        *		*        *		*        *		*        *		*        *
CCA CAG GTG TAC ACC CTG CCC CCA TCC CGG GAG GAG ATG ACC AAG AAC								
Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn>								
1830		1840		1850		1860		1870
*        *		*        *		*        *		*        *		*        *
CAG GTC AGC CTG ACC TGC CTG GTC AAA GGC TTC TAT CCC AGC GAC ATC								
Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile>								
1880		1890		1900		1910		1920
*        *		*        *		*        *		*        *		*        *
GCC GTG GAG TGG GAG AGC AAT GGG CAG CCG GAG AAC AAC TAC AAG ACC								
Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr>								
1930		1940		1950		1960		
*        *		*        *		*        *		*        *		*        *
ACG CCT CCC GTG CTG GAC TCC GAC GGC TCC TTC TTC CTC TAT AGC AAG								
Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys>								
1970		1980		1990		2000		2010
*        *		*        *		*        *		*        *		*        *
CTC ACC GTG GAC AAG AGC AGG TGG CAG CAG GGG AAC GTC TTC TCA TGC								
Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys>								
2020		2030		2040		2050		2060
*        *		*        *		*        *		*        *		*        *
TCC GTG ATG CAT GAG GCT CTG CAC AAC CAC TAC ACG CAG AAG AGC CTC								
Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu>								
2070		2080						
*        *		*        *		*        *				
TCC CTG TCT CCG GGT AAA TGA								
Ser Leu Ser Pro Gly Lys ***>								

Fig.22A.

20/63

```

      10      20      30      40
      *      *      *      *
ATG GTG AAG CCA TCA TTA CCA TTC ACA TCC CTC TTA TTC CTG CAG CTG
Met Val Lys Pro Ser Leu Pro Phe Thr Ser Leu Leu Phe Leu Gln Leu>

50      60      70      80      90
      *      *      *      *      *
CCC CTG CTG GGA GTG GGG CTG AAC ACG ACA ATT CTG ACG CCC AAT GGG
Pro Leu Leu Gly Val Gly Leu Asn Thr Thr Ile Leu Thr Pro Asn Gly>

100      110      120      130      140
      *      *      *      *      *
AAT GAA GAC ACC ACA GCT GAT TTC TTC CTG ACC ACT ATG CCC ACT GAC
Asn Glu Asp Thr Thr Ala Asp Phe Phe Leu Thr Thr Met Pro Thr Asp>

150      160      170      180      190
      *      *      *      *      *
TCC CTC AGT GTT TCC ACT CTG CCC CTC CCA GAG GTT CAG TGT TTT GTG
Ser Leu Ser Val Ser Thr Leu Pro Leu Pro Glu Val Gln Cys Phe Val>

200      210      220      230      240
      *      *      *      *      *
TTC AAT GTC GAG TAC ATG AAT TGC ACT TGG AAC AGC AGC TCT GAG CCC
Phe Asn Val Glu Tyr Met Asn Cys Thr Trp Asn Ser Ser Ser Glu Pro>

250      260      270      280
      *      *      *      *      *
CAG CCT ACC AAC CTC ACT CTG CAT TAT TGG TAC AAG AAC TCG GAT AAT
Gln Pro Thr Asn Leu Thr Leu His Tyr Trp Tyr Lys Asn Ser Asp Asn>

290      300      310      320      330
      *      *      *      *      *
GAT AAA GTC CAG AAG TGC AGC CAC TAT CTA TTC TCT GAA GAA ATC ACT
Asp Lys Val Gln Lys Cys Ser His Tyr Leu Phe Ser Glu Glu Ile Thr>

340      350      360      370      380
      *      *      *      *      *
TCT GGC TGT CAG TTG CAA AAA AAG GAG ATC CAC CTC TAC CAA ACA TTT
Ser Gly Cys Gln Leu Gln Lys Lys Glu Ile His Leu Tyr Gln Thr Phe>

390      400      410      420      430
      *      *      *      *      *
GTT GTT CAG CTC CAG GAC CCA CGG GAA CCC AGG AGA CAG GCC ACA CAG
Val Val Gln Leu Gln Asp Pro Arg Glu Pro Arg Arg Gln Ala Thr Gln>

440      450      460      470      480
      *      *      *      *      *
ATG CTA AAA CTG CAG AAT CTG GTG ATC CCC TGG GCT CCA GAG AAC CTA
Met Leu Lys Leu Gln Asn Leu Val Ile Pro Trp Ala Pro Glu Asn Leu>

490      500      510      520
      *      *      *      *
ACA CTT CAC AAA CTG AGT GAA TCC CAG CTA GAA CTG AAC TGG AAC AAC
Thr Leu His Lys Leu Ser Glu Ser Gln Leu Glu Leu Asn Trp Asn Asn>

530      540      550      560      570
      *      *      *      *      *
AGA TTC TTG AAC CAC TGT TTG GAG CAC TTG GTG CAG TAC CGG ACT GAC
Arg Phe Leu Asn His Cys Leu Glu His Leu Val Gln Tyr Arg Thr Asp>

```

## Fig.22B.

21/63

```

580      590      600      610      620
*      *      *      *      *
TGG GAC CAC AGC TGG ACT GAA CAA TCA GTG GAT TAT AGA CAT AAG TTC
Trp Asp His Ser Trp Thr Glu Gln Ser Val Asp Tyr Arg His Lys Phe>

630      640      650      660      670
*      *      *      *      *
TCC TTG CCT AGT GTG GAT GGG CAG AAA CGC TAC ACG TTT CGT GTT CGG
Ser Leu Pro Ser Val Asp Gly Gln Lys Arg Tyr Thr Phe Arg Val Arg>

680      690      700      710      720
*      *      *      *      *
AGC CGC TTT AAC CCA CTC TGT GGA AGT GCT CAG CAT TGC AGT GAA TGG
Ser Arg Phe Asn Pro Leu Cys Gly Ser Ala Gln His Trp Ser Glu Trp>

730      740      750      760
*      *      *      *
AGC CAC CCA ATC CAC TGG GGG AGC AAT ACT TCA AAA GAG AAC GGG AAC
Ser His Pro Ile His Trp Gly Ser Asn Thr Ser Lys Glu Asn Gly Asn>

770      780      790      800      810
*      *      *      *      *
ATG AAG GTC CTG CAG GAG CCC ACC TGC GTC TCC GAC TAC ATG AGC ATC
Met Lys Val Leu Gln Glu Pro Thr Cys Val Ser Asp Tyr Met Ser Ile>

820      830      840      850      860
*      *      *      *      *
TCT ACT TGC GAG TGG AAG ATG AAT GGT CCC ACC AAT TGC AGC ACC GAG
Ser Thr Cys Glu Trp Lys Met Asn Gly Pro Thr Asn Cys Ser Thr Glu>

870      880      890      900      910
*      *      *      *      *
CTC CGC CTG TTG TAC CAG CTG GTT TTT CTG CTC TCC GAA GCC CAC ACG
Leu Arg Leu Leu Tyr Gln Leu Val Phe Leu Leu Ser Glu Ala His Thr>

920      930      940      950      960
*      *      *      *      *
TGT ATC CCT GAG AAC AAC GGA GGC GCG GGG TGC GTG TGC CAC CTG CTC
Cys Ile Pro Glu Asn Asn Gly Gly Ala Gly Cys Val Cys His Leu Leu>

970      980      990      1000
*      *      *      *
ATG GAT GAC GTG GTC AGT GCG GAT AAC TAT ACA CTG GAC CTG TGG GCT
Met Asp Asp Val Val Ser Ala Asp Asn Tyr Thr Leu Asp Leu Trp Ala>

1010      1020      1030      1040      1050
*      *      *      *      *
GGG CAG CAG CTG CTG TGG AAG GGC TCC TTC AAG CCC AGC GAG CAT GTG
Gly Gln Gln Leu Leu Trp Lys Gly Ser Phe Lys Pro Ser Glu His Val>

1060      1070      1080      1090      1100
*      *      *      *      *
AAA CCC AGG GCC CCA GGA AAC CTG ACA GTT CAC ACC AAT GTC TCC GAC
Lys Pro Arg Ala Pro Gly Asn Leu Thr Val His Thr Asn Val Ser Asp>

1110      1120      1130      1140      1150
*      *      *      *      *
ACT CTG CTG CTG ACC TGG AGC AAC CCG TAT CCC CCT GAC AAT TAC CTG
Thr Leu Leu Leu Thr Trp Ser Asn Pro Tyr Pro Pro Asp Asn Tyr Leu>

1160      1170      1180      1190      1200
*      *      *      *      *

```

## Fig.22C.

22/63

TAT AAT CAT CTC ACC TAT GCA GTC AAC ATT TGG AGT GAA AAC GAC CCG  
 Tyr Asn His Leu Thr Tyr Ala Val Asn Ile Trp Ser Glu Asn Asp Pro>

1210 1220 1230 1240  
 \* \* \* \* \*  
 GCA GAT TTC AGA ATC TAT AAC GTG ACC TAC CTA GAA CCC TCC CTC CGC  
 Ala Asp Phe Arg Ile Tyr Asn Val Thr Tyr Leu Glu Pro Ser Leu Arg>

1250 1260 1270 1280 1290  
 \* \* \* \* \*  
 ATC GCA GCC AGC ACC CTG AAG TCT GGG ATT TCC TAC AGG GCA CGG GTG  
 Ile Ala Ala Ser Thr Leu Lys Ser Gly Ile Ser Tyr Arg Ala Arg Val>

1300 1310 1320 1330 1340  
 \* \* \* \* \*  
 AGG GCC TGG GCT CAG AGC TAT AAC ACC ACC TGG AGT GAG TGG AGC CCC  
 Arg Ala Trp Ala Gln Ser Tyr Asn Thr Thr Trp Ser Glu Trp Ser Pro>

1350 1360 1370 1380 1390  
 \* \* \* \* \*  
 AGC ACC AAG TGG CAC AAC TCC TAC AGG GAG CCC TTC GAG CAG TCC GGA  
 Ser Thr Lys Trp His Asn Ser Tyr Arg Glu Pro Phe Glu Gln Ser Gly>

1400 1410 1420 1430 1440  
 \* \* \* \* \*  
 GAC AAA ACT CAC ACA TGC CCA CCG TGC CCA GCA CCT GAA CTC CTG GGG  
 Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly>

1450 1460 1470 1480  
 \* \* \* \* \*  
 GGA CCG TCA GTC TTC CTC TTC CCC CCA AAA CCC AAG GAC ACC CTC ATG  
 Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met>

1490 1500 1510 1520 1530  
 \* \* \* \* \*  
 ATC TCC CGG ACC CCT GAG GTC ACA TGC GTG GTG GTG GAC GTG AGC CAC  
 Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His>

1540 1550 1560 1570 1580  
 \* \* \* \* \*  
 GAA GAC CCT GAG GTC AAG TTC AAC TGG TAC GTG GAC GGC GTG GAG GTG  
 Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val>

1590 1600 1610 1620 1630  
 \* \* \* \* \*  
 CAT AAT GCC AAG ACA AAG CCG CGG GAG GAG CAG TAC AAC AGC ACG TAC  
 His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr>

1640 1650 1660 1670 1680  
 \* \* \* \* \*  
 CGT GTG GTC AGC GTC CTC ACC GTC CTG CAC CAG GAC TGG CTG AAT GGC  
 Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly>

1690 1700 1710 1720  
 \* \* \* \* \*  
 AAG GAG TAC AAG TGC AAG GTC TCC AAC AAA GCC CTC CCA GCC CCC ATC  
 Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile>

1730 1740 1750 1760 1770  
 \* \* \* \* \*  
 GAG AAA ACC ATC TCC AAA GCC AAA GGG CAG CCC CGA GAA CCA CAG GTG  
 Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val>

23/63

Fig.22D.

```

1780      1790      1800      1810      1820
*          *          *          *          *
TAC ACC CTG CCC CCA TCC CGG GAT GAG CTG ACC AAG AAC CAG GTC AGC
Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser>

1830      1840      1850      1860      1870
*          *          *          *          *
CTG ACC TGC CTG GTC AAA GGC TTC TAT CCC AGC GAC ATC GCC GTG GAG
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu>

1880      1890      1900      1910      1920
*          *          *          *          *
TGG GAG AGC AAT GGG CAG CCG GAG AAC AAC TAC AAG ACC ACG CCT CCC
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro>

1930      1940      1950      1960
*          *          *          *          *
GTG CTG GAC TCC GAC GGC TCC TTC TTC CTC TAT AGC AAG CTC ACC GTG
Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val>

1970      1980      1990      2000      2010
*          *          *          *          *
GAC AAG AGC AGG TGG CAG CAG GGG AAC GTC TTC TCA TGC TCC GTG ATG
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met>

2020      2030      2040      2050      2060
*          *          *          *          *
CAT GAG GCT CTG CAC AAC CAC TAC ACG CAG AAG AGC CTC TCC CTG TCT
His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser>

2070
*          *          *
CCG GGT AAA TGA
Pro Gly Lys ***>

```

## Fig.23A.

24/63

```

      10      20      30      40
      *      *      *      *
ATG GTG AAG CCA TCA TTA CCA TTC ACA TCC CTC TTA TTC CTG CAG CTG
Met Val Lys Pro Ser Leu Pro Phe Thr Ser Leu Leu Phe Leu Gln Leu>

50      60      70      80      90
      *      *      *      *      *
CCC CTG CTG GGA GTG GGG CTG AAC ACG ACA ATT CTG ACG CCC AAT GGG
Pro Leu Leu Gly Val Gly Leu Asn Thr Thr Ile Leu Thr Pro Asn Gly>

100      110      120      130      140
      *      *      *      *      *
AAT GAA GAC ACC ACA GCT GAT TTC TTC CTG ACC ACT ATG CCC ACT GAC
Asn Glu Asp Thr Thr Ala Asp Phe Phe Leu Thr Thr Met Pro Thr Asp>

150      160      170      180      190
      *      *      *      *      *
TCC CTC AGT GTT TCC ACT CTG CCC CTC CCA GAG GTT CAG TGT TTT GTG
Ser Leu Ser Val Ser Thr Leu Pro Leu Pro Glu Val Gln Cys Phe Val>

200      210      220      230      240
      *      *      *      *      *
TTC AAT GTC GAG TAC ATG AAT TGC ACT TGG AAC AGC AGC TCT GAG CCC
Phe Asn Val Glu Tyr Met Asn Cys Thr Trp Asn Ser Ser Ser Glu Pro>

250      260      270      280
      *      *      *      *      *
CAG CCT ACC AAC CTC ACT CTG CAT TAT TGG TAC AAG AAC TCG GAT AAT
Gln Pro Thr Asn Leu Thr Leu His Tyr Trp Tyr Lys Asn Ser Asp Asn>

290      300      310      320      330
      *      *      *      *      *
GAT AAA GTC CAG AAG TGC AGC CAC TAT CTA TTC TCT GAA GAA ATC ACT
Asp Lys Val Gln Lys Cys Ser His Tyr Leu Phe Ser Glu Glu Ile Thr>

340      350      360      370      380
      *      *      *      *      *
TCT GGC TGT CAG TTG CAA AAA AAG GAG ATC CAC CTC TAC CAA ACA TTT
Ser Gly Cys Gln Leu Gln Lys Lys Glu Ile His Leu Tyr Gln Thr Phe>

390      400      410      420      430
      *      *      *      *      *
GTT GTT CAG CTC CAG GAC CCA CGG GAA CCC AGG AGA CAG GCC ACA CAG
Val Val Gln Leu Gln Asp Pro Arg Glu Pro Arg Arg Gln Ala Thr Gln>

440      450      460      470      480
      *      *      *      *      *
ATG CTA AAA CTG CAG AAT CTG GTG ATC CCC TGG GCT CCA GAG AAC CTA
Met Leu Lys Leu Gln Asn Leu Val Ile Pro Trp Ala Pro Glu Asn Leu>

490      500      510      520
      *      *      *      *      *
ACA CTT CAC AAA CTG AGT GAA TCC CAG CTA GAA CTG AAC TGG AAC AAC
Thr Leu His Lys Leu Ser Glu Ser Gln Leu Glu Leu Asn Trp Asn Asn>

530      540      550      560      570
      *      *      *      *      *
AGA TTC TTG AAC CAC TGT TTG GAG CAC TTG GTG CAG TAC CGG ACT GAC
Arg Phe Leu Asn His Cys Leu Glu His Leu Val Gln Tyr Arg Thr Asp>

```



## Fig.23B.

25/63

```

580      590      600      610      620
*      *      *      *      *
TGG GAC CAC AGC TGG ACT GAA CAA TCA GTG GAT TAT AGA CAT AAG TTC
Trp Asp His Ser Trp Thr Glu Gln Ser Val Asp Tyr Arg His Lys Phe>

630      640      650      660      670
*      *      *      *      *
TCC TTG CCT AGT GTG GAT GGG CAG AAA CGC TAC ACG TTT CGT GTT CGG
Ser Leu Pro Ser Val Asp Gly Gln Lys Arg Tyr Thr Phe Arg Val Arg>

680      690      700      710      720
*      *      *      *      *
AGC CGC TTT AAC CCA CTC TGT GGA AGT GCT CAG CAT TGG AGT GAA TGG
Ser Arg Phe Asn Pro Leu Cys Gly Ser Ala Gln His Trp Ser Glu Trp>

730      740      750      760
*      *      *      *
AGC CAC CCA ATC CAC TGG GGG AGC AAT ACT TCA AAA GAG AAC GCG TCG
Ser His Pro Ile His Trp Gly Ser Asn Thr Ser Lys Glu Asn Ala Ser>

770      780      790      800      810
*      *      *      *      *
TCT GGG AAC ATG AAG GTC CTG CAG GAG CCC ACC TGC GTC TCC GAC TAC
Ser Gly Asn Met Lys Val Leu Gln Glu Pro Thr Cys Val Ser Asp Tyr>

820      830      840      850      860
*      *      *      *      *
ATG AGC ATC TCT ACT TGC GAG TGG AAG ATG AAT GGT CCC ACC AAT TGC
Met Ser Ile Ser Thr Cys Glu Trp Lys Met Asn Gly Pro Thr Asn Cys>

870      880      890      900      910
*      *      *      *      *
AGC ACC GAG CTC CGC CTG TTG TAC CAG CTG GTT TTT CTG CTC TCC GAA
Ser Thr Glu Leu Arg Leu Leu Tyr Gln Leu Val Phe Leu Leu Ser Glu>

920      930      940      950      960
*      *      *      *      *
GCC CAC ACG TGT ATC CCT GAG AAC AAC GGA GGC GCG GGG TGC GTG TGC
Ala His Thr Cys Ile Pro Glu Asn Asn Gly Gly Ala Gly Cys Val Cys>

970      980      990      1000
*      *      *      *
CAC CTG CTC ATG GAT GAC GTG GTC AGT GCG GAT AAC TAT ACA CTG GAC
His Leu Leu Met Asp Asp Val Val Ser Ala Asp Asn Tyr Thr Leu Asp>

1010      1020      1030      1040      1050
*      *      *      *      *
CTG TGG GCT GGG CAG CAG CTG CTG TGG AAG GGC TCC TTC AAG CCC AGC
Leu Trp Ala Gly Gln Gln Leu Leu Trp Lys Gly Ser Phe Lys Pro Ser>

1060      1070      1080      1090      1100
*      *      *      *      *
GAG CAT GTG AAA CCC AGG GCC CCA GGA AAC CTG ACA GTT CAC ACC AAT
Glu His Val Lys Pro Arg Ala Pro Gly Asn Leu Thr Val His Thr Asn>

1110      1120      1130      1140      1150
*      *      *      *      *
GTC TCC GAC ACT CTG CTG CTG ACC TGG AGC AAC CCG TAT CCC CCT GAC
Val Ser Asp Thr Leu Leu Leu Thr Trp Ser Asn Pro Tyr Pro Pro Asp>

1160      1170      1180      1190      1200
*      *      *      *      *

```

## Fig.23C.

26/63

AAT TAC CTG TAT AAT CAT CTC ACC TAT GCA GTC AAC ATT TGG AGT GAA  
 Asn Tyr Leu Tyr Asn His Leu Thr Tyr Ala Val Asn Ile Trp Ser Glu>

1210 1220 1230 1240  
 AAC GAC CCG GCA GAT TTC AGA ATC TAT AAC GTG ACC TAC CTA GAA CCC  
 Asn Asp Pro Ala Asp Phe Arg Ile Tyr Asn Val Thr Tyr Leu Glu Pro>

1250 1260 1270 1280 1290  
 TCC CTC CGC ATC GCA GCC AGC ACC CTG AAG TCT GGG ATT TCC TAC AGG  
 Ser Leu Arg Ile Ala Ala Ser Thr Leu Lys Ser Gly Ile Ser Tyr Arg>

1300 1310 1320 1330 1340  
 GCA CGG GTG AGG GCC TGG GCT CAG AGC TAT AAC ACC ACC TGG AGT GAG  
 Ala Arg Val Arg Ala Trp Ala Gln Ser Tyr Asn Thr Thr Trp Ser Glu>

1350 1360 1370 1380 1390  
 TGG AGC CCC AGC ACC AAG TGG CAC AAC TCC TAC AGG GAG CCC TTC GAG  
 Trp Ser Pro Ser Thr Lys Trp His Asn Ser Tyr Arg Glu Pro Phe Glu>

1400 1410 1420 1430 1440  
 CAG TCC GGA GAC AAA ACT CAC ACA TGC CCA CCG TGC CCA GCA CCT GAA  
 Gln Ser Gly Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu>

1450 1460 1470 1480  
 CTC CTG GGG GGA CCG TCA GTC TTC CTC TTC CCC CCA AAA CCC AAG GAC  
 Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp>

1490 1500 1510 1520 1530  
 ACC CTC ATG ATC TCC CGG ACC CCT GAG GTC ACA TGC GTG GTG GTG GAC  
 Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp>

1540 1550 1560 1570 1580  
 GTG AGC CAC GAA GAC CCT GAG GTC AAG TTC AAC TGG TAC GTG GAC GGC  
 Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly>

1590 1600 1610 1620 1630  
 GTG GAG GTG CAT AAT GCC AAG ACA AAG CCG CGG GAG GAG CAG TAC AAC  
 Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn>

1640 1650 1660 1670 1680  
 AGC ACG TAC CGT GTG GTC AGC GTC CTC ACC GTC CTG CAC CAG GAC TGG  
 Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp>

1690 1700 1710 1720  
 CTG AAT GGC AAG GAG TAC AAG TGC AAG GTC TCC AAC AAA GCC CTC CCA  
 Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro>

1730 1740 1750 1760 1770  
 GCC CCC ATC GAG AAA ACC ATC TCC AAA GCC AAA GGG CAG CCC CGA GAA  
 Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu>

27/63

## Fig.23D.

1780		1790		1800		1810		1820
*       *		*       *		*       *		*       *		*       *
CCA CAG GTG	TAC ACC CTG	CCC CCA TCC	CGG GAT GAG	CTG ACC AAG	AAC			
Pro Gln Val	Tyr Thr Leu	Pro Pro Ser	Arg Asp Glu	Leu Thr Lys	Asn>			
1830		1840		1850		1860		1870
*       *		*       *		*       *		*       *		*       *
CAG GTC AGC	CTG ACC TGC	CTG GTC AAA	GGC TTC TAT	CCC AGC GAC	ATC			
Gln Val Ser	Leu Thr Cys	Leu Val Lys	Gly Phe Tyr	Pro Ser Asp	Ile>			
1880		1890		1900		1910		1920
*       *		*       *		*       *		*       *		*       *
GCC GTG GAG	TGG GAG AGC	AAT GGG CAG	CCG GAG AAC	AAC TAC AAG	ACC			
Ala Val Glu	Trp Glu Ser	Asn Gly Gln	Pro Glu Asn	Asn Asn Tyr	Lys Thr>			
1930		1940		1950		1960		
*       *		*       *		*       *		*       *		*       *
ACG CCT CCC	GTG CTG GAC	TCC GAC GGC	TCC TTC TTC	CTC TAT AGC	AAG			
Thr Pro Pro	Val Leu Asp	Ser Asp Gly	Ser Phe Phe	Leu Tyr Ser	Lys>			
1970		1980		1990		2000		2010
*       *		*       *		*       *		*       *		*       *
CTC ACC GTG	GAC AAG AGC	AGG TGG CAG	CAG GGG AAC	GTC TTC TCA	TGC			
Leu Thr Val	Asp Lys Ser	Arg Trp Gln	Gln Gly Asn	Val Phe Ser	Cys>			
2020		2030		2040		2050		2060
*       *		*       *		*       *		*       *		*       *
TCC GTG ATG	CAT GAG GCT	CTG CAC AAC	CAC TAC ACG	CAG AAG AGC	CTC			
Ser Val Met	His Glu Ala	Leu His Asn	His Tyr Thr	Gln Lys Ser	Leu>			
2070		2080						
*       *		*       *		*       *				
TCC CTG TCT	CCG GGT AAA	TGA						
Ser Leu Ser	Pro Gly Lys	***>						

## Fig.24A.

28/63

```

      10      20      30      40
      *      *      *      *
ATG GTG GCC GTC GGC TGC GCG CTG CTG GCT GCC CTG CTG GCC GCG CCG
Met Val Ala Val Gly Cys Ala Leu Leu Ala Ala Leu Leu Ala Ala Pro>

50      60      70      80      90
      *      *      *      *      *
GGA GCG GCG CTG GCC CCA AGG CGC TGC CCT GCG CAG GAG GTG GCA AGA
Gly Ala Ala Leu Ala Pro Arg Arg Cys Pro Ala Gln Glu Val Ala Arg>

100     110     120     130     140
      *      *      *      *      *
GGC GTG CTG ACC AGT CTG CCA GGA GAC AGC GTG ACT CTG ACC TGC CCG
Gly Val Leu Thr Ser Leu Pro Gly Asp Ser Val Thr Leu Thr Cys Pro>

150     160     170     180     190
      *      *      *      *      *
GGG GTA GAG CCG GAA GAC AAT GCC ACT GTT CAC TGG GTG CTC AGG AAG
Gly Val Glu Pro Glu Asp Asn Ala Thr Val His Trp Val Leu Arg Lys>

200     210     220     230     240
      *      *      *      *      *
CCG GCT GCA GGC TCC CAC CCC AGC AGA TGG GCT GGC ATG GGA AGG AGG
Pro Ala Ala Gly Ser His Pro Ser Arg Trp Ala Gly Met Gly Arg Arg>

250     260     270     280
      *      *      *      *
CTG CTG CTG AGG TCG GTG CAG CTC CAC GAC TCT GGA AAC TAT TCA TGC
Leu Leu Leu Arg Ser Val Gln Leu His Asp Ser Gly Asn Tyr Ser Cys>

290     300     310     320     330
      *      *      *      *      *
TAC CGG GCC GGC CGC CCA GCT GGG ACT GTG CAC TTG CTG GTG GAT GTT
Tyr Arg Ala Gly Arg Pro Ala Gly Thr Val His Leu Leu Val Asp Val>

340     350     360     370     380
      *      *      *      *      *
CCC CCC GAG GAG CCC CAG CTC TCC TGC TTC CGG AAG AGC CCC CTC AGC
Pro Pro Glu Glu Pro Gln Leu Ser Cys Phe Arg Lys Ser Pro Leu Ser>

390     400     410     420     430
      *      *      *      *      *
AAT GTT GTT TGT GAG TGG GGT CCT CGG AGC ACC CCA TCC CTG ACG ACA
Asn Val Val Cys Glu Trp Gly Pro Arg Ser Thr Pro Ser Leu Thr Thr>

440     450     460     470     480
      *      *      *      *      *
AAG GCT GTG CTC TTG GTG AGG AAG TTT CAG AAC AGT CCG GCC GAA GAC
Lys Ala Val Leu Leu Val Arg Lys Phe Gln Asn Ser Pro Ala Glu Asp>

490     500     510     520
      *      *      *      *
TTC CAG GAG CCG TGC CAG TAT TCC CAG GAG TCC CAG AAG TTC TCC TGC
Phe Gln Glu Pro Cys Gln Tyr Ser Gln Glu Ser Gln Lys Phe Ser Cys>

530     540     550     560     570
      *      *      *      *      *
CAG TTA GCA GTC CCG GAG GGA GAC AGC TCT TTC TAC ATA GTG TCC ATG
Gln Leu Ala Val Pro Glu Gly Asp Ser Ser Phe Tyr Ile Val Ser Met>

```

## Fig.24B.

29/63

```

580      590      600      610      620
*      *      *      *      *
TGC GTC GCC AGT AGT GTC GGG AGC AAG TTC AGC AAA ACT CAA ACC TTT
Cys Val Ala Ser Ser Val Gly Ser Lys Phe Ser Lys Thr Gln Thr Phe>

630      640      650      660      670
*      *      *      *      *
CAG GGT TGT GGA ATC TTG CAG CCT GAT CCG CCT GCC AAC ATC ACA GTC
Gln Gly Cys Gly Ile Leu Gln Pro Asp Pro Pro Ala Asn Ile Thr Val>

680      690      700      710      720
*      *      *      *      *
ACT GCC GTG GCC AGA AAC CCC CGC TGG CTC AGT GTC ACC TGG CAA GAC
Thr Ala Val Ala Arg Asn Pro Arg Trp Leu Ser Val Thr Trp Gln Asp>

730      740      750      760
*      *      *      *
CCC CAC TCC TGG AAC TCA TCT TTC TAC AGA CTA CGG TTT GAG CTC AGA
Pro His Ser Trp Asn Ser Ser Phe Tyr Arg Leu Arg Phe Glu Leu Arg>

770      780      790      800      810
*      *      *      *      *
TAT CGG GCT GAA CGG TCA AAG ACA TTC ACA ACA TGG ATG GTC AAG GAC
Tyr Arg Ala Glu Arg Ser Lys Thr Phe Thr Thr Trp Met Val Lys Asp>

820      830      840      850      860
*      *      *      *      *
CTC CAG CAT CAC TGT GTC ATC CAC GAC GCC TGG AGC GGC CTG AGG CAC
Leu Gln His His Cys Val Ile His Asp Ala Trp Ser Gly Leu Arg His>

870      880      890      900      910
*      *      *      *      *
GTG GTG CAG CTT CGT GCC CAG GAG GAG TTC GGG CAA GGC GAG TGG AGC
Val Val Gln Leu Arg Ala Gln Glu Glu Phe Gly Gln Gly Glu Trp Ser>

920      930      940      950      960
*      *      *      *      *
GAG TGG AGC CCG GAG GCC ATG GGC ACG CCT TGG ACA GAA TCC AGG AGT
Glu Trp Ser Pro Glu Ala Met Gly Thr Pro Trp Thr Glu Ser Arg Ser>

970      980      990      1000
*      *      *      *
CCT CCA GCT GAG AAC GAG GTG TCC ACC CCC ATG ACC GGT GGC GCG CCT
Pro Pro Ala Glu Asn Glu Val Ser Thr Pro Met Thr Gly Gly Ala Pro>

1010      1020      1030      1040      1050
*      *      *      *      *
TCA GGT GCT CAG CTG GAA CTT CTA GAC CCA TGT GGT TAT ATC AGT CCT
Ser Gly Ala Gln Leu Glu Leu Leu Asp Pro Cys Gly Tyr Ile Ser Pro>

1060      1070      1080      1090      1100
*      *      *      *      *
GAA TCT CCA GTT GTA CAA CTT CAT TCT AAT TTC ACT GCA GTT TGT GTG
Glu Ser Pro Val Val Gln Leu His Ser Asn Phe Thr Ala Val Cys Val>

1110      1120      1130      1140      1150
*      *      *      *      *
CTA AAG GAA AAA TGT ATG GAT TAT TTT CAT GTA AAT GCT AAT TAC ATT
Leu Lys Glu Lys Cys Met Asp Tyr Phe His Val Asn Ala Asn Tyr Ile>

1160      1170      1180      1190      1200
*      *      *      *      *

```

## Fig.24C.

30/63

GTC TGG AAA ACA AAC CAT TTT ACT ATT CCT AAG GAG CAA TAT ACT ATC  
 Val Trp Lys Thr Asn His Phe Thr Ile Pro Lys Glu Gln Tyr Thr Ile>

1210 1220 1230 1240  
 \* \* \* \* \*  
 ATA AAC AGA ACA GCA TCC AGT GTC ACC TTT ACA GAT ATA GCT TCA TTA  
 Ile Asn Arg Thr Ala Ser Ser Val Thr Phe Thr Asp Ile Ala Ser Leu>

1250 1260 1270 1280 1290  
 \* \* \* \* \*  
 AAT ATT CAG CTC ACT TGC AAC ATT CTT ACA TTC GGA CAG CTT GAA CAG  
 Asn Ile Gln Leu Thr Cys Asn Ile Leu Thr Phe Gly Gln Leu Glu Gln>

1300 1310 1320 1330 1340  
 \* \* \* \* \*  
 AAT GTT TAT GGA ATC ACA ATA ATT TCA GGC TTG CCT CCA GAA AAA CCT  
 Asn Val Tyr Gly Ile Thr Ile Ile Ser Gly Leu Pro Pro Glu Lys Pro>

1350 1360 1370 1380 1390  
 \* \* \* \* \*  
 AAA AAT TTG AGT TGC ATT GTG AAC GAG GGG AAG AAA ATG AGG TGT GAG  
 Lys Asn Leu Ser Cys Ile Val Asn Glu Gly Lys Lys Met Arg Cys Glu>

1400 1410 1420 1430 1440  
 \* \* \* \* \*  
 TGG GAT GGT GGA AGG GAA ACA CAC TTG GAG ACA AAC TTC ACT TTA AAA  
 Trp Asp Gly Gly Arg Glu Thr His Leu Glu Thr Asn Phe Thr Leu Lys>

1450 1460 1470 1480  
 \* \* \* \* \*  
 TCT GAA TGG GCA ACA CAC AAG TTT GCT GAT TGC AAA GCA AAA CGT GAC  
 Ser Glu Trp Ala Thr His Lys Phe Ala Asp Cys Lys Ala Lys Arg Asp>

1490 1500 1510 1520 1530  
 \* \* \* \* \*  
 ACC CCC ACC TCA TGC ACT GTT GAT TAT TCT ACT GTG TAT TTT GTC AAC  
 Thr Pro Thr Ser Cys Thr Val Asp Tyr Ser Thr Val Tyr Phe Val Asn>

1540 1550 1560 1570 1580  
 \* \* \* \* \*  
 ATT GAA GTC TGG GTA GAA GCA GAG AAT GCC CTT GGG AAG GTT ACA TCA  
 Ile Glu Val Trp Val Glu Ala Glu Asn Ala Leu Gly Lys Val Thr Ser>

1590 1600 1610 1620 1630  
 \* \* \* \* \*  
 GAT CAT ATC AAT TTT GAT CCT GTA TAT AAA GTG AAG CCC AAT CCG CCA  
 Asp His Ile Asn Phe Asp Pro Val Tyr Lys Val Lys Pro Asn Pro Pro>

1640 1650 1660 1670 1680  
 \* \* \* \* \*  
 CAT AAT TTA TCA GTG ATC AAC TCA GAG GAA CTG TCT AGT ATC TTA AAA  
 His Asn Leu Ser Val Ile Asn Ser Glu Glu Leu Ser Ser Ile Leu Lys>

1690 1700 1710 1720  
 \* \* \* \* \*  
 TTG ACA TGG ACC AAC CCA AGT ATT AAG AGT GTT ATA ATA CTA AAA TAT  
 Leu Thr Trp Thr Asn Pro Ser Ile Lys Ser Val Ile Ile Leu Lys Tyr>

1730 1740 1750 1760 1770  
 \* \* \* \* \*  
 AAC ATT CAA TAT AGG ACC AAA GAT GCC TCA ACT TGG AGC CAG ATT CCT  
 Asn Ile Gln Tyr Arg Thr Lys Asp Ala Ser Thr Trp Ser Gln Ile Pro>

## Fig.24D.

31/63

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1780      1790      1800      1810      1820
*          *          *          *          *
CCT GAA GAC ACA GCA TCC ACC CGA TCT TCA TTC ACT GTC CAA GAC CTT
Pro Glu Asp Thr Ala Ser Thr Arg Ser Ser Phe Thr Val Gln Asp Leu>

1830      1840      1850      1860      1870
*          *          *          *          *
AAA CCT TTT ACA GAA TAT GTG TTT AGG ATT CGC TGT ATG AAG GAA GAT
Lys Pro Phe Thr Glu Tyr Val Phe Arg Ile Arg Cys Met Lys Glu Asp>

1880      1890      1900      1910      1920
*          *          *          *          *
GGT AAG GGA TAC TGG AGT GAC TGG AGT GAA GAA GCA AGT GGG ATC ACC
Gly Lys Gly Tyr Trp Ser Asp Trp Ser Glu Glu Ala Ser Gly Ile Thr>

1930      1940      1950      1960
*          *          *          *          *
TAT GAA GAT AGA CCA TCT AAA GCA CCA AGT TTC TGG TAT AAA ATA GAT
Tyr Glu Asp Arg Pro Ser Lys Ala Pro Ser Phe Trp Tyr Lys Ile Asp>

1970      1980      1990      2000      2010
*          *          *          *          *
CCA TCC CAT ACT CAA GGC TAC AGA ACT GTA CAA CTC GTG TGG AAG ACA
Pro Ser His Thr Gln Gly Tyr Arg Thr Val Gln Leu Val Trp Lys Thr>

2020      2030      2040      2050      2060
*          *          *          *          *
TTG CCT CCT TTT GAA GCC AAT GGA AAA ATC TTG GAT TAT GAA GTG ACT
Leu Pro Pro Phe Glu Ala Asn Gly Lys Ile Leu Asp Tyr Glu Val Thr>

2070      2080      2090      2100      2110
*          *          *          *          *
CTC ACA AGA TGG AAA TCA CAT TTA CAA AAT TAC ACA GTT AAT GCC ACA
Leu Thr Arg Trp Lys Ser His Leu Gln Asn Tyr Thr Val Asn Ala Thr>

2120      2130      2140      2150      2160
*          *          *          *          *
AAA CTG ACA GTA AAT CTC ACA AAT GAT CGC TAT CTA GCA ACC CTA ACA
Lys Leu Thr Val Asn Leu Thr Asn Asp Arg Tyr Leu Ala Thr Leu Thr>

2170      2180      2190      2200
*          *          *          *          *
GTA AGA AAT CTT GTT GGC AAA TCA GAT GCA GCT GTT TTA ACT ATC CCT
Val Arg Asn Leu Val Gly Lys Ser Asp Ala Ala Val Leu Thr Ile Pro>

2210      2220      2230      2240      2250
*          *          *          *          *
GCC TGT GAC TTT CAA GCT ACT CAC CCT GTA ATG GAT CTT AAA GCA TTC
Ala Cys Asp Phe Gln Ala Thr His Pro Val Met Asp Leu Lys Ala Phe>

2260      2270      2280      2290      2300
*          *          *          *          *
CCC AAA GAT AAC ATG CTT TGG GTG GAA TGG ACT ACT CCA AGG GAA TCT
Pro Lys Asp Asn Met Leu Trp Val Glu Trp Thr Thr Pro Arg Glu Ser>

2310      2320      2330      2340      2350
*          *          *          *          *
GTA AAG AAA TAT ATA CTT GAG TGG TGT GTG TTA TCA GAT AAA GCA CCC
Val Lys Lys Tyr Ile Leu Glu Trp Cys Val Leu Ser Asp Lys Ala Pro>

2360      2370      2380      2390      2400

```

## Fig.24E.

32/63

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*      *      *      *      *      *      *      *
TGT ATC ACA GAC TGG CAA CAA GAA GAT GGT ACC GTG CAT CGC ACC TAT
Cys Ile Thr Asp Trp Gln Gln Glu Asp Gly Thr Val His Arg Thr Tyr>

      2410      2420      2430      2440
*      *      *      *      *      *      *      *
TTA AGA GGG AAC TTA GCA GAG AGC AAA TGC TAT TTG ATA ACA GTT ACT
Leu Arg Gly Asn Leu Ala Glu Ser Lys Cys Tyr Leu Ile Thr Val Thr>

2450      2460      2470      2480      2490
*      *      *      *      *      *      *      *
CCA GTA TAT GCT GAT GGA CCA GGA AGC CCT GAA TCC ATA AAG GCA TAC
Pro Val Tyr Ala Asp Gly Pro Gly Ser Pro Glu Ser Ile Lys Ala Tyr>

      2500      2510      2520      2530      2540
*      *      *      *      *      *      *      *
CTT AAA CAA GCT CCA CCT TCC AAA GGA CCT ACT GTT CGG ACA AAA AAA
Leu Lys Gln Ala Pro Pro Ser Lys Gly Pro Thr Val Arg Thr Lys Lys>

      2550      2560      2570      2580      2590
*      *      *      *      *      *      *      *
GTA GGG AAA AAC GAA GCT GTC TTA GAG TGG GAC CAA CTT CCT GTT GAT
Val Gly Lys Asn Glu Ala Val Leu Glu Trp Asp Gln Leu Pro Val Asp>

      2600      2610      2620      2630      2640
*      *      *      *      *      *      *      *
GTT CAG AAT GGA TTT ATC AGA AAT TAT ACT ATA TTT TAT AGA ACC ATC
Val Gln Asn Gly Phe Ile Arg Asn Tyr Thr Ile Phe Tyr Arg Thr Ile>

      2650      2660      2670      2680
*      *      *      *      *      *      *      *
ATT GGA AAT GAA ACT GCT GTG AAT GTG GAT TCT TCC CAC ACA GAA TAT
Ile Gly Asn Glu Thr Ala Val Asn Val Asp Ser Ser His Thr Glu Tyr>

2690      2700      2710      2720      2730
*      *      *      *      *      *      *      *
ACA TTG TCC TCT TTG ACT AGT GAC ACA TTG TAC ATG GTA CGA ATG GCA
Thr Leu Ser Ser Leu Thr Ser Asp Thr Leu Tyr Met Val Arg Met Ala>

      2740      2750      2760      2770      2780
*      *      *      *      *      *      *      *
GCA TAC ACA GAT GAA GGT GGG AAG GAT GGT CCA GAA TTC ACT TTT ACT
Ala Tyr Thr Asp Glu Gly Gly Lys Asp Gly Pro Glu Phe Thr Phe Thr>

      2790      2800      2810      2820      2830
*      *      *      *      *      *      *      *
ACC CCA AAG TTT GCT CAA GGA GAA ATT GAA TCC GGG GGC GAC AAA ACT
Thr Pro Lys Phe Ala Gln Gly Glu Ile Glu Ser Gly Gly Asp Lys Thr>

      2840      2850      2860      2870      2880
*      *      *      *      *      *      *      *
CAC ACA TGC CCA CCG TGC CCA GCA CCT GAA CTC CTG GGG GGA CCG TCA
His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser>

      2890      2900      2910      2920
*      *      *      *      *      *      *      *
GTC TTC CTC TTC CCC CCA AAA CCC AAG GAC ACC CTC ATG ATC TCC CGG
Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg>

2930      2940      2950      2960      2970
*      *      *      *      *      *      *      *
ACC CCT GAG GTC ACA TGC GTG GTG GTG GAC GTG AGC CAC GAA GAC CCT

```



## Fig.24F.

33/63

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro>

2980                      2990                      3000                      3010                      3020

\*                      \*                      \*                      \*                      \*

GAG GTC AAG TTC AAC TGG TAC GTG GAC GGC GTG GAG GTG CAT AAT GCC  
Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala>

3030                      3040                      3050                      3060                      3070

\*                      \*                      \*                      \*                      \*

AAG ACA AAG CCG CGG GAG GAG CAG TAC AAC AGC ACG TAC CGT GTG GTC  
Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val>

3080                      3090                      3100                      3110                      3120

\*                      \*                      \*                      \*                      \*

AGC GTC CTC ACC GTC CTG CAC CAG GAC TGG CTG AAT GGC AAG GAG TAC  
Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr>

3130                      3140                      3150                      3160

\*                      \*                      \*                      \*

AAG TGC AAG GTC TCC AAC AAA GCC CTC CCA GCC CCC ATC GAG AAA ACC  
Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr>

3170                      3180                      3190                      3200                      3210

\*                      \*                      \*                      \*                      \*

ATC TCC AAA GCC AAA GGG CAG CCC CGA GAA CCA CAG GTG TAC ACC CTG  
Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu>

3220                      3230                      3240                      3250                      3260

\*                      \*                      \*                      \*                      \*

CCC CCA TCC CGG GAT GAG CTG ACC AAG AAC CAG GTC AGC CTG ACC TGC  
Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys>

3270                      3280                      3290                      3300                      3310

\*                      \*                      \*                      \*                      \*

CTG GTC AAA GGC TTC TAT CCC AGC GAC ATC GCC GTG GAG TGG GAG AGC  
Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser>

3320                      3330                      3340                      3350                      3360

\*                      \*                      \*                      \*                      \*

AAT GGG CAG CCG GAG AAC AAC TAC AAG ACC ACG CCT CCC GTG CTG GAC  
Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp>

3370                      3380                      3390                      3400

\*                      \*                      \*                      \*

TCC GAC GGC TCC TTC TTC CTC TAC AGC AAG CTC ACC GTG GAC AAG AGC  
Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser>

3410                      3420                      3430                      3440                      3450

\*                      \*                      \*                      \*                      \*

AGG TGG CAG CAG GGG AAC GTC TTC TCA TGC TCC GTG ATG CAT GAG GCT  
Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala>

3460                      3470                      3480                      3490                      3500

\*                      \*                      \*                      \*                      \*

CTG CAC AAC CAC TAC ACG CAG AAG AGC CTC TCC CTG TCT CCG GGT AAA  
Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys>

\*  
TGA  
\*\*\*>

Fig.25A.

34/63

```

      10      20      30      40
      *      *      *      *
ATG GTG GCC GTC GGC TGC GCG CTG CTG GCT GCC CTG CTG GCC GCG CCG
Met Val Ala Val Gly Cys Ala Leu Leu Ala Ala Leu Leu Ala Ala Pro>

50      60      70      80      90
      *      *      *      *      *
GGA GCG GCG CTG GCC CCA AGG CGC TGC CCT GCG CAG GAG GTG GCA AGA
Gly Ala Ala Leu Ala Pro Arg Arg Cys Pro Ala Gln Glu Val Ala Arg>

100     110     120     130     140
      *      *      *      *      *
GGC GTG CTG ACC AGT CTG CCA GGA GAC AGC GTG ACT CTG ACC TGC CCG
Gly Val Leu Thr Ser Leu Pro Gly Asp Ser Val Thr Leu Thr Cys Pro>

150     160     170     180     190
      *      *      *      *      *
GGG GTA GAG CCG GAA GAC AAT GCC ACT GTT CAC TGG GTG CTC AGG AAG
Gly Val Glu Pro Glu Asp Asn Ala Thr Val His Trp Val Leu Arg Lys>

200     210     220     230     240
      *      *      *      *      *
CCG GCT GCA GGC TCC CAC CCC AGC AGA TGG GCT GGC ATG GGA AGG AGG
Pro Ala Ala Gly Ser His Pro Ser Arg Trp Ala Gly Met Gly Arg Arg>

250     260     270     280
      *      *      *      *      *
CTG CTG CTG AGG TCG GTG CAG CTC CAC GAC TCT GGA AAC TAT TCA TGC
Leu Leu Leu Arg Ser Val Gln Leu His Asp Ser Gly Asn Tyr Ser Cys>

290     300     310     320     330
      *      *      *      *      *
TAC CGG GCC GGC CGC CCA GCT GGG ACT GTG CAC TTG CTG GTG GAT GTT
Tyr Arg Ala Gly Arg Pro Ala Gly Thr Val His Leu Leu Val Asp Val>

340     350     360     370     380
      *      *      *      *      *
CCC CCC GAG GAG CCC CAG CTC TCC TGC TTC CGG AAG AGC CCC CTC AGC
Pro Pro Glu Glu Pro Gln Leu Ser Cys Phe Arg Lys Ser Pro Leu Ser>

390     400     410     420     430
      *      *      *      *      *
AAT GTT GTT TGT GAG TGG GGT CCT CGG AGC ACC CCA TCC CTG ACG ACA
Asn Val Val Cys Glu Trp Gly Pro Arg Ser Thr Pro Ser Leu Thr Thr>

440     450     460     470     480
      *      *      *      *      *
AAG GCT GTG CTC TTG GTG AGG AAG TTT CAG AAC AGT CCG GCC GAA GAC
Lys Ala Val Leu Leu Val Arg Lys Phe Gln Asn Ser Pro Ala Glu Asp>

490     500     510     520
      *      *      *      *      *
TTC CAG GAG CCG TGC CAG TAT TCC CAG GAG TCC CAG AAG TTC TCC TGC
Phe Gln Glu Pro Cys Gln Tyr Ser Gln Glu Ser Gln Lys Phe Ser Cys>

530     540     550     560     570
      *      *      *      *      *
CAG TTA GCA GTC CCG GAG GGA GAC AGC TCT TTC TAC ATA GTG TCC ATG
Gln Leu Ala Val Pro Glu Gly Asp Ser Ser Phe Tyr Ile Val Ser Met>

```

## Fig.25B.

35/63

```

580      590      600      610      620
*      *      *      *      *
TGC GTC GCC AGT AGT GTC GGG AGC AAG TTC AGC AAA ACT CAA ACC TTT
Cys Val Ala Ser Ser Val Gly Ser Lys Phe Ser Lys Thr Gln Thr Phe>

630      640      650      660      670
*      *      *      *      *
CAG GGT TGT GGA ATC TTG CAG CCT GAT CCG CCT GCC AAC ATC ACA GTC
Gln Gly Cys Gly Ile Leu Gln Pro Asp Pro Pro Ala Asn Ile Thr Val>

680      690      700      710      720
*      *      *      *      *
ACT GCC GTG GCC AGA AAC CCC CGC TGG CTC AGT GTC ACC TGG CAA GAC
Thr Ala Val Ala Arg Asn Pro Arg Trp Leu Ser Val Thr Trp Gln Asp>

730      740      750      760
*      *      *      *
CCC CAC TCC TGG AAC TCA TCT TTC TAC AGA CTA CGG TTT GAG CTC AGA
Pro His Ser Trp Asn Ser Ser Phe Tyr Arg Leu Arg Phe Glu Leu Arg>

770      780      790      800      810
*      *      *      *      *
TAT CGG GCT GAA CGG TCA AAG ACA TTC ACA ACA TGG ATG GTC AAG GAC
Tyr Arg Ala Glu Arg Ser Lys Thr Phe Thr Thr Trp Met Val Lys Asp>

820      830      840      850      860
*      *      *      *      *
CTC CAG CAT CAC TGT GTC ATC CAC GAC GCC TGG AGC GGC CTG AGG CAC
Leu Gln His His Cys Val Ile His Asp Ala Trp Ser Gly Leu Arg His>

870      880      890      900      910
*      *      *      *      *
GTG GTG CAG CTT CGT GCC CAG GAG GAG TTC GGG CAA GGC GAG TGG AGC
Val Val Gln Leu Arg Ala Gln Glu Glu Phe Gly Gln Gly Glu Trp Ser>

920      930      940      950      960
*      *      *      *      *
GAG TGG AGC CCG GAG GCC ATG GGC ACG CCT TGG ACA GAA TCG CGA TCG
Glu Trp Ser Pro Glu Ala Met Gly Thr Pro Trp Thr Glu Ser Arg Ser>

970      980      990      1000
*      *      *      *
CCT CCA GCT GAG AAC GAG GTG TCC ACC CCC ATG GAA CTT CTA GAC CCA
Pro Pro Ala Glu Asn Glu Val Ser Thr Pro Met Glu Leu Leu Asp Pro>

1010      1020      1030      1040      1050
*      *      *      *      *
TGT GGT TAT ATC AGT CCT GAA TCT CCA GTT GTA CAA CTT CAT TCT AAT
Cys Gly Tyr Ile Ser Pro Glu Ser Pro Val Val Gln Leu His Ser Asn>

1060      1070      1080      1090      1100
*      *      *      *      *
TTC ACT GCA GTT TGT GTG CTA AAG GAA AAA TGT ATG GAT TAT TTT CAT
Phe Thr Ala Val Cys Val Leu Lys Glu Lys Cys Met Asp Tyr Phe His>

1110      1120      1130      1140      1150
*      *      *      *      *
GTA AAT GCT AAT TAC ATT GTC TGG AAA ACA AAC CAT TTT ACT ATT CCT
Val Asn Ala Asn Tyr Ile Val Trp Lys Thr Asn His Phe Thr Ile Pro>

1160      1170      1180      1190      1200
*      *      *      *      *

```

## Fig.25C.

36/63

AAG GAG CAA TAT ACT ATC ATA AAC AGA ACA GCA TCC AGT GTC ACC TTT  
 Lys Glu Gln Tyr Thr Ile Ile Asn Arg Thr Ala Ser Ser Val Thr Phe>

1210 1220 1230 1240  
 \* \* \* \* \*  
 ACA GAT ATA GCT TCA TTA AAT ATT CAG CTC ACT TGC AAC ATT CTT ACA  
 Thr Asp Ile Ala Ser Leu Asn Ile Gln Leu Thr Cys Asn Ile Leu Thr>

1250 1260 1270 1280 1290  
 \* \* \* \* \*  
 TTC GGA CAG CTT GAA CAG AAT GTT TAT GGA ATC ACA ATA ATT TCA GGC  
 Phe Gly Gln Leu Glu Gln Asn Val Tyr Gly Ile Thr Ile Ile Ser Gly>

1300 1310 1320 1330 1340  
 \* \* \* \* \*  
 TTG CCT CCA GAA AAA CCT AAA AAT TTG AGT TGC ATT GTG AAC GAG GGG  
 Leu Pro Pro Glu Lys Pro Lys Asn Leu Ser Cys Ile Val Asn Glu Gly>

1350 1360 1370 1380 1390  
 \* \* \* \* \*  
 AAG AAA ATG AGG TGT GAG TGG GAT GGT GGA AGG GAA ACA CAC TTG GAG  
 Lys Lys Met Arg Cys Glu Trp Asp Gly Gly Arg Glu Thr His Leu Glu>

1400 1410 1420 1430 1440  
 \* \* \* \* \*  
 ACA AAC TTC ACT TTA AAA TCT GAA TGG GCA ACA CAC AAG TTT GCT GAT  
 Thr Asn Phe Thr Leu Lys Ser Glu Trp Ala Thr His Lys Phe Ala Asp>

1450 1460 1470 1480  
 \* \* \* \* \*  
 TGC AAA GCA AAA CGT GAC ACC CCC ACC TCA TGC ACT GTT GAT TAT TCT  
 Cys Lys Ala Lys Arg Asp Thr Pro Thr Ser Cys Thr Val Asp Tyr Ser>

1490 1500 1510 1520 1530  
 \* \* \* \* \*  
 ACT GTG TAT TTT GTC AAC ATT GAA GTC TGG GTA GAA GCA GAG AAT GCC  
 Thr Val Tyr Phe Val Asn Ile Glu Val Trp Val Glu Ala Glu Asn Ala>

1540 1550 1560 1570 1580  
 \* \* \* \* \*  
 CTT GGG AAG GTT ACA TCA GAT CAT ATC AAT TTT GAT CCT GTA TAT AAA  
 Leu Gly Lys Val Thr Ser Asp His Ile Asn Phe Asp Pro Val Tyr Lys>

1590 1600 1610 1620 1630  
 \* \* \* \* \*  
 GTG AAG CCC AAT CCG CCA CAT AAT TTA TCA GTG ATC AAC TCA GAG GAA  
 Val Lys Pro Asn Pro Pro His Asn Leu Ser Val Ile Asn Ser Glu Glu>

1640 1650 1660 1670 1680  
 \* \* \* \* \*  
 CTG TCT AGT ATC TTA AAA TTG ACA TGG ACC AAC CCA AGT ATT AAG AGT  
 Leu Ser Ser Ile Leu Lys Leu Thr Trp Thr Asn Pro Ser Ile Lys Ser>

1690 1700 1710 1720  
 \* \* \* \* \*  
 GTT ATA ATA CTA AAA TAT AAC ATT CAA TAT AGG ACC AAA GAT GCC TCA  
 Val Ile Ile Leu Lys Tyr Asn Ile Gln Tyr Arg Thr Lys Asp Ala Ser>

1730 1740 1750 1760 1770  
 \* \* \* \* \*  
 ACT TGG AGC CAG ATT CCT CCT GAA GAC ACA GCA TCC ACC CGA TCT TCA  
 Thr Trp Ser Gln Ile Pro Pro Glu Asp Thr Ala Ser Thr Arg Ser Ser>

## Fig.25D.

37/63

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1780      1790      1800      1810      1820
*          *          *          *          *
TTC ACT GTC CAA GAC CTT AAA CCT TTT ACA GAA TAT GTG TTT AGG ATT
Phe Thr Val Gln Asp Leu Lys Pro Phe Thr Glu Tyr Val Phe Arg Ile>

1830      1840      1850      1860      1870
*          *          *          *          *
CGC TGT ATG AAG GAA GAT GGT AAG GGA TAC TGG AGT GAC TGG AGT GAA
Arg Cys Met Lys Glu Asp Gly Lys Gly Tyr Trp Ser Asp Trp Ser Glu>

1880      1890      1900      1910      1920
*          *          *          *          *
GAA GCA AGT GGG ATC ACC TAT GAA GAT AGA CCA TCT AAA GCA CCA AGT
Glu Ala Ser Gly Ile Thr Tyr Glu Asp Arg Pro Ser Lys Ala Pro Ser>

1930      1940      1950      1960
*          *          *          *          *
TTC TGG TAT AAA ATA GAT CCA TCC CAT ACT CAA GGC TAC AGA ACT GTA
Phe Trp Tyr Lys Ile Asp Pro Ser His Thr Gln Gly Tyr Arg Thr Val>

1970      1980      1990      2000      2010
*          *          *          *          *
CAA CTC GTG TGG AAG ACA TTG CCT CCT TTT GAA GCC AAT GGA AAA ATC
Gln Leu Val Trp Lys Thr Leu Pro Pro Phe Glu Ala Asn Gly Lys Ile>

2020      2030      2040      2050      2060
*          *          *          *          *
TTG GAT TAT GAA GTG ACT CTC ACA AGA TGG AAA TCA CAT TTA CAA AAT
Leu Asp Tyr Glu Val Thr Leu Thr Arg Trp Lys Ser His Leu Gln Asn>

2070      2080      2090      2100      2110
*          *          *          *          *
TAC ACA GTT AAT GCC ACA AAA CTG ACA GTA AAT CTC ACA AAT GAT CGC
Tyr Thr Val Asn Ala Thr Lys Leu Thr Val Asn Leu Thr Asn Asp Arg>

2120      2130      2140      2150      2160
*          *          *          *          *
TAT CTA GCA ACC CTA ACA GTA AGA AAT CTT GTT GGC AAA TCA GAT GCA
Tyr Leu Ala Thr Leu Thr Val Arg Asn Leu Val Gly Lys Ser Asp Ala>

2170      2180      2190      2200
*          *          *          *          *
GCT GTT TTA ACT ATC CCT GCC TGT GAC TTT CAA GCT ACT CAC CCT GTA
Ala Val Leu Thr Ile Pro Ala Cys Asp Phe Gln Ala Thr His Pro Val>

2210      2220      2230      2240      2250
*          *          *          *          *
ATG GAT CTT AAA GCA TTC CCC AAA GAT AAC ATG CTT TGG GTG GAA TGG
Met Asp Leu Lys Ala Phe Pro Lys Asp Asn Met Leu Trp Val Glu Trp>

2260      2270      2280      2290      2300
*          *          *          *          *
ACT ACT CCA AGG GAA TCT GTA AAG AAA TAT ATA CTT GAG TGG TGT GTG
Thr Thr Pro Arg Glu Ser Val Lys Lys Tyr Ile Leu Glu Trp Cys Val>

2310      2320      2330      2340      2350
*          *          *          *          *
TTA TCA GAT AAA GCA CCC TGT ATC ACA GAC TGG CAA CAA GAA GAT GGT
Leu Ser Asp Lys Ala Pro Cys Ile Thr Asp Trp Gln Gln Glu Asp Gly>

2360      2370      2380      2390      2400

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## Fig.25E.

38/63

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*      *      *      *      *      *      *      *
ACC GTG CAT CGC ACC TAT TTA AGA GGG AAC TTA GCA GAG AGC AAA TGC
Thr Val His Arg Thr Tyr Leu Arg Gly Asn Leu Ala Glu Ser Lys Cys>

      2410      2420      2430      2440
*      *      *      *      *      *      *      *
TAT TTG ATA ACA GTT ACT CCA GTA TAT GCT GAT GGA CCA GGA AGC CCT
Tyr Leu Ile Thr Val Thr Pro Val Tyr Ala Asp Gly Pro Gly Ser Pro>

2450      2460      2470      2480      2490
*      *      *      *      *      *      *      *
GAA TCC ATA AAG GCA TAC CTT AAA CAA GCT CCA CCT TCC AAA GGA CCT
Glu Ser Ile Lys Ala Tyr Leu Lys Gln Ala Pro Pro Ser Lys Gly Pro>

      2500      2510      2520      2530      2540
*      *      *      *      *      *      *      *
ACT GTT CGG ACA AAA AAA GTA GGG AAA AAC GAA GCT GTC TTA GAG TGG
Thr Val Arg Thr Lys Lys Val Gly Lys Asn Glu Ala Val Leu Glu Trp>

      2550      2560      2570      2580      2590
*      *      *      *      *      *      *      *
GAC CAA CTT CCT GTT GAT GTT CAG AAT GGA TTT ATC AGA AAT TAT ACT
Asp Gln Leu Pro Val Asp Val Gln Asn Gly Phe Ile Arg Asn Tyr Thr>

      2600      2610      2620      2630      2640
*      *      *      *      *      *      *      *
ATA TTT TAT AGA ACC ATC ATT GGA AAT GAA ACT GCT GTG AAT GTG GAT
Ile Phe Tyr Arg Thr Ile Ile Gly Asn Glu Thr Ala Val Asn Val Asp>

      2650      2660      2670      2680
*      *      *      *      *      *      *      *
TCT TCC CAC ACA GAA TAT ACA TTG TCC TCT TTG ACT AGT GAC ACA TTG
Ser Ser His Thr Glu Tyr Thr Leu Ser Ser Leu Thr Ser Asp Thr Leu>

2690      2700      2710      2720      2730
*      *      *      *      *      *      *      *
TAC ATG GTA CGA ATG GCA GCA TAC ACA GAT GAA GGT GGG AAG GAT GGT
Tyr Met Val Arg Met Ala Ala Tyr Thr Asp Glu Gly Gly Lys Asp Gly>

      2740      2750      2760      2770      2780
*      *      *      *      *      *      *      *
CCA GAA TTC ACT TTT ACT ACC CCA AAG TTT GCT CAA GGA GAA ATT GAA
Pro Glu Phe Thr Phe Thr Thr Pro Lys Phe Ala Gln Gly Glu Ile Glu>

      2790      2800      2810      2820      2830
*      *      *      *      *      *      *      *
TCC GGG GGC GAC AAA ACT CAC ACA TGC CCA CCG TGC CCA GCA CCT GAA
Ser Gly Gly Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu>

      2840      2850      2860      2870      2880
*      *      *      *      *      *      *      *
CTC CTG GGG GGA CCG TCA GTC TTC CTC TTC CCC CCA AAA CCC AAG GAC
Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp>

      2890      2900      2910      2920
*      *      *      *      *      *      *      *
ACC CTC ATG ATC TCC CGG ACC CCT GAG GTC ACA TGC GTG GTG GTG GAC
Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp>

2930      2940      2950      2960      2970
*      *      *      *      *      *      *      *
GTG AGC CAC GAA GAC CCT GAG GTC AAG TTC AAC TGG TAC GTG GAC GGC

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## Fig.25F.

39/63

Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly>

2980                      2990                      3000                      3010                      3020

\*                      \*                      \*                      \*                      \*

GTG GAG GTG CAT AAT GCC AAG ACA AAG CCG CGG GAG GAG CAG TAC AAC  
Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn>

3030                      3040                      3050                      3060                      3070

\*                      \*                      \*                      \*                      \*

AGC ACG TAC CGT GTG GTC AGC GTC CTC ACC GTC CTG CAC CAG GAC TGG  
Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp>

3080                      3090                      3100                      3110                      3120

\*                      \*                      \*                      \*                      \*

CTG AAT GGC AAG GAG TAC AAG TGC AAG GTC TCC AAC AAA GCC CTC CCA  
Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro>

3130                      3140                      3150                      3160

\*                      \*                      \*                      \*

GCC CCC ATC GAG AAA ACC ATC TCC AAA GCC AAA GGG CAG CCC CGA GAA  
Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu>

3170                      3180                      3190                      3200                      3210

\*                      \*                      \*                      \*                      \*

CCA CAG GTG TAC ACC CTG CCC CCA TCC CGG GAT GAG CTG ACC AAG AAC  
Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn>

3220                      3230                      3240                      3250                      3260

\*                      \*                      \*                      \*                      \*

CAG GTC AGC CTG ACC TGC CTG GTC AAA GGC TTC TAT CCC AGC GAC ATC  
Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile>

3270                      3280                      3290                      3300                      3310

\*                      \*                      \*                      \*                      \*

GCC GTG GAG TGG GAG AGC AAT GGG CAG CCG GAG AAC AAC TAC AAG ACC  
Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr>

3320                      3330                      3340                      3350                      3360

\*                      \*                      \*                      \*                      \*

ACG CCT CCC GTG CTG GAC TCC GAC GGC TCC TTC TTC CTC TAC AGC AAG  
Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys>

3370                      3380                      3390                      3400

\*                      \*                      \*                      \*

CTC ACC GTG GAC AAG AGC AGG TGG CAG CAG GGG AAC GTC TTC TCA TGC  
Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys>

3410                      3420                      3430                      3440                      3450

\*                      \*                      \*                      \*                      \*

TCC GTG ATG CAT GAG GCT CTG CAC AAC CAC TAC ACG CAG AAG AGC CTC  
Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu>

3460                      3470

\*                      \*

TCC CTG TCT CCG GGT AAA TGA  
Ser Leu Ser Pro Gly Lys \*\*\*>

Fig.26A.

40/63

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      *      10      *      20      *      30      *      40      *
ATG GTG CTT CTG TGG TGT GTA GTG AGT CTC TAC TTT TAT GGA ATC CTG
Met Val Leu Leu Trp Cys Val Val Ser Leu Tyr Phe Tyr Gly Ile Leu>

50      60      70      80      90
*      *      *      *      *
CAA AGT GAT GCC TCA GAA CGC TGC GAT GAC TGG GGA CTA GAC ACC ATG
Gln Ser Asp Ala Ser Glu Arg Cys Asp Asp Trp Gly Leu Asp Thr Met>

100      110      120      130      140
*      *      *      *      *
AGG CAA ATC CAA GTG TTT GAA GAT GAG CCA GCT CGC ATC AAG TGC CCA
Arg Gln Ile Gln Val Phe Glu Asp Glu Pro Ala Arg Ile Lys Cys Pro>

150      160      170      180      190
*      *      *      *      *
CTC TTT GAA CAC TTC TTG AAA TTC AAC TAC AGC ACA GCC CAT TCA GCT
Leu Phe Glu His Phe Leu Lys Phe Asn Tyr Ser Thr Ala His Ser Ala>

200      210      220      230      240
*      *      *      *      *
GGC CTT ACT CTG ATC TGG TAT TGG ACT AGG CAG GAC CGG GAC CTT GAG
Gly Leu Thr Leu Ile Trp Tyr Trp Thr Arg Gln Asp Arg Asp Leu Glu>

250      260      270      280
*      *      *      *
GAG CCA ATT AAC TTC CGC CTC CCC GAG AAC CGC ATT AGT AAG GAG AAA
Glu Pro Ile Asn Phe Arg Leu Pro Glu Asn Arg Ile Ser Lys Glu Lys>

290      300      310      320      330
*      *      *      *      *
GAT GTG CTG TGG TTC CGG CCC ACT CTC CTC AAT GAC ACT GGC AAC TAT
Asp Val Leu Trp Phe Arg Pro Thr Leu Leu Asn Asp Thr Gly Asn Tyr>

340      350      360      370      380
*      *      *      *      *
ACC TGC ATG TTA AGG AAC ACT ACA TAT TGC AGC AAA GTT GCA TTT CCC
Thr Cys Met Leu Arg Asn Thr Thr Tyr Cys Ser Lys Val Ala Phe Pro>

390      400      410      420      430
*      *      *      *      *
TTG GAA GTT GTT CAA AAA GAC AGC TGT TTC AAT TCC CCC ATG AAA CTC
Leu Glu Val Val Gln Lys Asp Ser Cys Phe Asn Ser Pro Met Lys Leu>

440      450      460      470      480
*      *      *      *      *
CCA GTG CAT AAA CTG TAT ATA GAA TAT GGC ATT CAG AGG ATC ACT TGT
Pro Val His Lys Leu Tyr Ile Glu Tyr Gly Ile Gln Arg Ile Thr Cys>

490      500      510      520
*      *      *      *
CCA AAT GTA GAT GGA TAT TTT CCT TCC AGT GTC AAA CCG ACT ATC ACT
Pro Asn Val Asp Gly Tyr Phe Pro Ser Ser Val Lys Pro Thr Ile Thr>

530      540      550      560      570
*      *      *      *      *
TGG TAT ATG GGC TGT TAT AAA ATA CAG AAT TTT AAT AAT GTA ATA CCC
Trp Tyr Met Gly Cys Tyr Lys Ile Gln Asn Phe Asn Asn Val Ile Pro>

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## Fig.26B.

41/63

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580      590      600      610      620
*      *      *      *      *
GAA GGT ATG AAC TTG AGT TTC CTC ATT GCC TTA ATT TCA AAT AAT GGA
Glu Gly Met Asn Leu Ser Phe Leu Ile Ala Leu Ile Ser Asn Asn Gly>

630      640      650      660      670
*      *      *      *      *
AAT TAC ACA TGT GTT GTT ACA TAT CCA GAA AAT GGA CGT ACG TTT CAT
Asn Tyr Thr Cys Val Val Thr Tyr Pro Glu Asn Gly Arg Thr Phe His>

680      690      700      710      720
*      *      *      *      *
CTC ACC AGG ACT CTG ACT GTA AAG GTA GTA GGC TCT CCA AAA AAT GCA
Leu Thr Arg Thr Leu Thr Val Lys Val Val Gly Ser Pro Lys Asn Ala>

730      740      750      760
*      *      *      *
GTG CCC CCT GTG ATC CAT TCA CCT AAT GAT CAT GTG GTC TAT GAG AAA
Val Pro Pro Val Ile His Ser Pro Asn Asp His Val Val Tyr Glu Lys>

770      780      790      800      810
*      *      *      *      *
GAA CCA GGA GAG GAG CTA CTC ATT CCC TGT ACG GTC TAT TTT AGT TTT
Glu Pro Gly Glu Glu Leu Leu Ile Pro Cys Thr Val Tyr Phe Ser Phe>

820      830      840      850      860
*      *      *      *      *
CTG ATG GAT TCT CGC AAT GAG GTT TGG TGG ACC ATT GAT GGA AAA AAA
Leu Met Asp Ser Arg Asn Glu Val Trp Trp Thr Ile Asp Gly Lys Lys>

870      880      890      900      910
*      *      *      *      *
CCT GAT GAC ATC ACT ATT GAT GTC ACC ATT AAC GAA AGT ATA AGT CAT
Pro Asp Asp Ile Thr Ile Asp Val Thr Ile Asn Glu Ser Ile Ser His>

920      930      940      950      960
*      *      *      *      *
AGT AGA ACA GAA GAT GAA ACA AGA ACT CAG ATT TTG AGC ATC AAG AAA
Ser Arg Thr Glu Asp Glu Thr Arg Thr Gln Ile Leu Ser Ile Lys Lys>

970      980      990      1000
*      *      *      *
GTT ACC TCT GAG GAT CTC AAG CGC AGC TAT GTC TGT CAT GCT AGA AGT
Val Thr Ser Glu Asp Leu Lys Arg Ser Tyr Val Cys His Ala Arg Ser>

1010      1020      1030      1040      1050
*      *      *      *      *
GCC AAA GGC GAA GTT GCC AAA GCA GCC AAG GTG AAG CAG AAA GTG CCA
Ala Lys Gly Glu Val Ala Lys Ala Ala Lys Val Lys Gln Lys Val Pro>

1060      1070      1080      1090      1100
*      *      *      *      *
GCT CCA AGA TAC ACA GTG TCC GGT GGC GCG CCT ATG CTG AGC GAG GCT
Ala Pro Arg Tyr Thr Val Ser Gly Gly Ala Pro Met Leu Ser Glu Ala>

1110      1120      1130      1140      1150
*      *      *      *      *
GAT AAA TGC AAG GAA CGT GAA GAA AAA ATA ATT TTA GTG TCA TCT GCA
Asp Lys Cys Lys Glu Arg Glu Glu Lys Ile Ile Leu Val Ser Ser Ala>

1160      1170      1180      1190      1200
*      *      *      *      *

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## Fig.26C.

42/63

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AAT GAA ATT GAT GTT CGT CCC TGT CCT CTT AAC CCA AAT GAA CAC AAA
Asn Glu Ile Asp Val Arg Pro Cys Pro Leu Asn Pro Asn Glu His Lys>

      1210      1220      1230      1240
      *      *      *      *
GGC ACT ATA ACT TGG TAT AAG GAT GAC AGC AAG ACA CCT GTA TCT ACA
Gly Thr Ile Thr Trp Tyr Lys Asp Asp Ser Lys Thr Pro Val Ser Thr>

1250      1260      1270      1280      1290
      *      *      *      *      *
GAA CAA GCC TCC AGG ATT CAT CAA CAC AAA GAG AAA CTT TGG TTT GTT
Glu Gln Ala Ser Arg Ile His Gln His Lys Glu Lys Leu Trp Phe Val>

      1300      1310      1320      1330      1340
      *      *      *      *      *
CCT GCT AAG GTG GAG GAT TCA GGA CAT TAC TAT TGC GTG GTA AGA AAT
Pro Ala Lys Val Glu Asp Ser Gly His Tyr Tyr Cys Val Val Arg Asn>

      1350      1360      1370      1380      1390
      *      *      *      *      *
TCA TCT TAC TGC CTC AGA ATT AAA ATA AGT GCA AAA TTT GTG GAG AAT
Ser Ser Tyr Cys Leu Arg Ile Lys Ile Ser Ala Lys Phe Val Glu Asn>

      1400      1410      1420      1430      1440
      *      *      *      *      *
GAG CCT AAC TTA TGT TAT AAT GCA CAA GCC ATA TTT AAG CAG AAA CTA
Glu Pro Asn Leu Cys Tyr Asn Ala Gln Ala Ile Phe Lys Gln Lys Leu>

      1450      1460      1470      1480
      *      *      *      *
CCC GTT GCA GGA GAC GGA GGA CTT GTG TGC CCT TAT ATG GAG TTT TTT
Pro Val Ala Gly Asp Gly Gly Leu Val Cys Pro Tyr Met Glu Phe Phe>

1490      1500      1510      1520      1530
      *      *      *      *      *
AAA AAT GAA AAT AAT GAG TTA CCT AAA TTA CAG TGG TAT AAG GAT TGC
Lys Asn Glu Asn Asn Glu Leu Pro Lys Leu Gln Trp Tyr Lys Asp Cys>

      1540      1550      1560      1570      1580
      *      *      *      *      *
AAA CCT CTA CTT CTT GAC AAT ATA CAC TTT AGT GGA GTC AAA GAT AGG
Lys Pro Leu Leu Leu Asp Asn Ile His Phe Ser Gly Val Lys Asp Arg>

      1590      1600      1610      1620      1630
      *      *      *      *      *
CTC ATC GTG ATG AAT GTG GCT GAA AAG CAT AGA GGG AAC TAT ACT TGT
Leu Ile Val Met Asn Val Ala Glu Lys His Arg Gly Asn Tyr Thr Cys>

      1640      1650      1660      1670      1680
      *      *      *      *      *
CAT GCA TCC TAC ACA TAC TTG GGC AAG CAA TAT CCT ATT ACC CGG GTA
His Ala Ser Tyr Thr Tyr Leu Gly Lys Gln Tyr Pro Ile Thr Arg Val>

      1690      1700      1710      1720
      *      *      *      *
ATA GAA TTT ATT ACT CTA GAG GAA AAC AAA CCC ACA AGG CCT GTG ATT
Ile Glu Phe Ile Thr Leu Glu Glu Asn Lys Pro Thr Arg Pro Val Ile>

1730      1740      1750      1760      1770
      *      *      *      *      *
GTG AGC CCA GCT AAT GAG ACA ATG GAA GTA GAC TTG GGA TCC CAG ATA
Val Ser Pro Ala Asn Glu Thr Met Glu Val Asp Leu Gly Ser Gln Ile>

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## Fig.26D.

43/63

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1780      1790      1800      1810      1820
*          *          *          *          *
CAA TTG ATC TGT AAT GTC ACC GGC CAG TTG AGT GAC ATT GCT TAC TGG
Gln Leu Ile Cys Asn Val Thr Gly Gln Leu Ser Asp Ile Ala Tyr Trp>

1830      1840      1850      1860      1870
*          *          *          *          *
AAG TGG AAT GGG TCA GTA ATT GAT GAA GAT GAC CCA GTG CTA GGG GAA
Lys Trp Asn Gly Ser Val Ile Asp Glu Asp Asp Pro Val Leu Gly Glu>

1880      1890      1900      1910      1920
*          *          *          *          *
GAC TAT TAC AGT GTG GAA AAT CCT GCA AAC AAA AGA AGG AGT ACC CTC
Asp Tyr Tyr Ser Val Glu Asn Pro Ala Asn Lys Arg Arg Ser Thr Leu>

1930      1940      1950      1960
*          *          *          *          *
ATC ACA GTG CTT AAT ATA TCG GAA ATT GAG AGT AGA TTT TAT AAA CAT
Ile Thr Val Leu Asn Ile Ser Glu Ile Glu Ser Arg Phe Tyr Lys His>

1970      1980      1990      2000      2010
*          *          *          *          *
CCA TTT ACC TGT TTT GCC AAG AAT ACA CAT GGT ATA GAT GCA GCA TAT
Pro Phe Thr Cys Phe Ala Lys Asn Thr His Gly Ile Asp Ala Ala Tyr>

2020      2030      2040      2050      2060
*          *          *          *          *
ATC CAG TTA ATA TAT CCA GTC ACT AAT TCC GGA GAC AAA ACT CAC ACA
Ile Gln Leu Ile Tyr Pro Val Thr Asn Ser Gly Asp Lys Thr His Thr>

2070      2080      2090      2100      2110
*          *          *          *          *
TGC CCA CCG TGC CCA GCA CCT GAA CTC CTG GGG GGA CCG TCA GTC TTC
Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe>

2120      2130      2140      2150      2160
*          *          *          *          *
CTC TTC CCC CCA AAA CCC AAG GAC ACC CTC ATG ATC TCC CGG ACC CCT
Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro>

2170      2180      2190      2200
*          *          *          *          *
GAG GTC ACA TGC GTG GTG GTG GAC GTG AGC CAC GAA GAC CCT GAG GTC
Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val>

2210      2220      2230      2240      2250
*          *          *          *          *
AAG TTC AAC TGG TAC GTG GAC GGC GTG GAG GTG CAT AAT GCC AAG ACA
Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr>

2260      2270      2280      2290      2300
*          *          *          *          *
AAG CCG CGG GAG GAG CAG TAC AAC AGC ACG TAC CGT GTG GTC AGC GTC
Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val>

2310      2320      2330      2340      2350
*          *          *          *          *
CTC ACC GTC CTG CAC CAG GAC TGG CTG AAT GGC AAG GAG TAC AAG TGC
Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys>

2360      2370      2380      2390      2400

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44/63

Fig.26E.

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      *      *      *      *      *      *      *      *      *      *
AAG GTC TCC AAC AAA GCC CTC CCA GCC CCC ATC GAG AAA ACC ATC TCC
Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser>

      2410      2420      2430      2440
      *      *      *      *      *      *      *      *
AAA GCC AAA GGG CAG CCC CGA GAA CCA CAG GTG TAC ACC CTG CCC CCA
Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro>

2450      2460      2470      2480      2490
      *      *      *      *      *      *      *      *
TCC CGG GAG GAG ATG ACC AAG AAC CAG GTC AGC CTG ACC TGC CTG GTC
Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val>

      2500      2510      2520      2530      2540
      *      *      *      *      *      *      *      *
AAA GGC TTC TAT CCC AGC GAC ATC GCC GTG GAG TGG GAG AGC AAT GGG
Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly>

      2550      2560      2570      2580      2590
      *      *      *      *      *      *      *      *
CAG CCG GAG AAC AAC TAC AAG ACC ACG CCT CCC GTG CTG GAC TCC GAC
Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp>

      2600      2610      2620      2630      2640
      *      *      *      *      *      *      *      *
GGC TCC TTC TTC CTC TAT AGC AAG CTC ACC GTG GAC AAG AGC AGG TGG
Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp>

      2650      2660      2670      2680
      *      *      *      *      *      *      *      *
CAG CAG GGG AAC GTC TTC TCA TGC TCC GTG ATG CAT GAG GCT CTG CAC
Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His>

2690      2700      2710      2720      2730
      *      *      *      *      *      *      *      *
AAC CAC TAC ACG CAG AAG AGC CTC TCC CTG TCT CCG GGT AAA TGA
Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys ***>

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45/63

Fig.27.

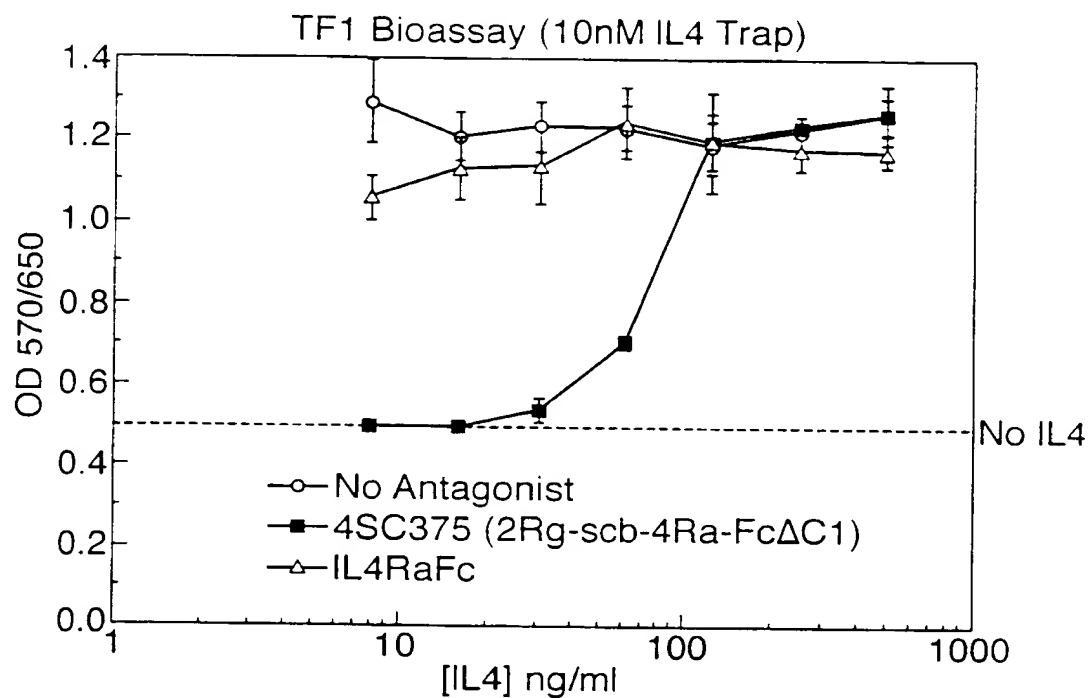
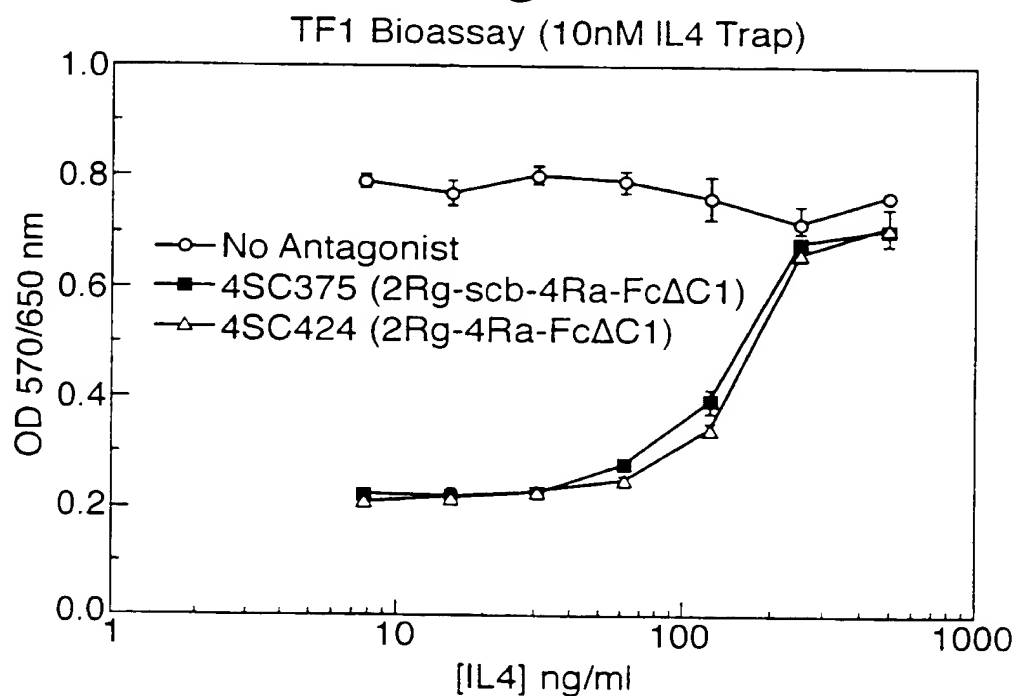


Fig.28.



46/63

Fig.29.

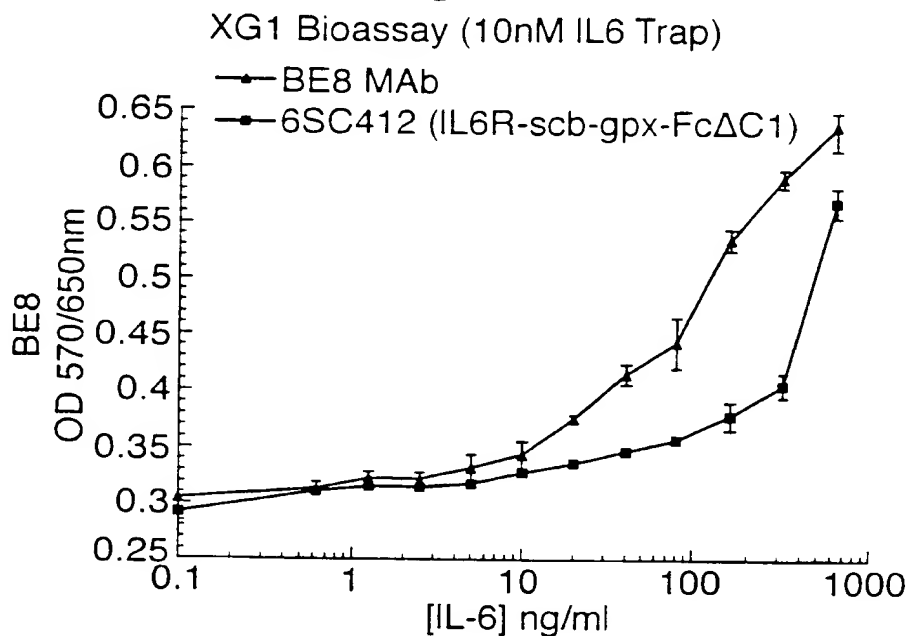
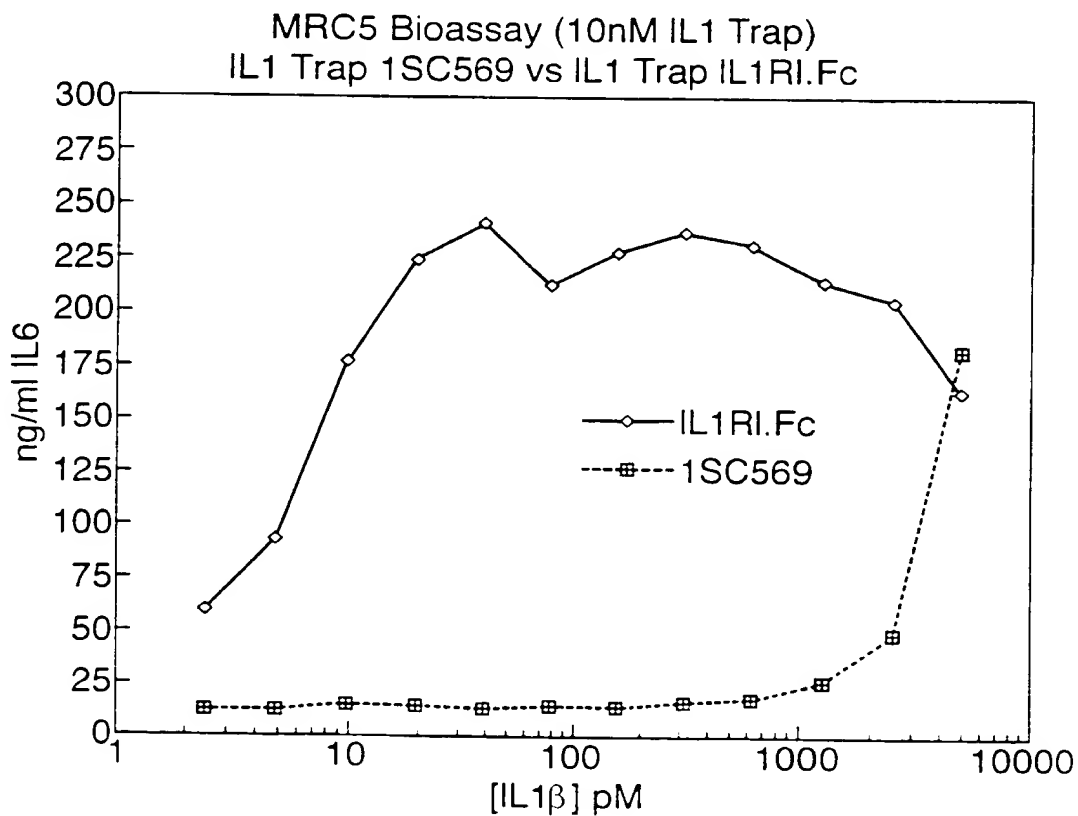


Fig.30.



47/63

## Fig.31A.

			10				20				30				40			
	*		*		*		*		*		*		*		*		*	
ATG	GTG	TGG	CTT	TGC	TCT	GGG	CTC	CTG	TTC	CCT	GTG	AGC	TGC	CTG	GTC			
TAC	CAC	ACC	GAA	ACG	AGA	CCC	GAG	GAC	AAG	GGA	CAC	TCG	ACG	GAC	CAG			
Met	Val	Trp	Leu	Cys	Ser	Gly	Leu	Leu	Phe	Pro	Val	Ser	Cys	Leu	Val>			
50			60				70				80				90			
*		*	*		*		*		*		*		*		*		*	
CTG	CTG	CAG	GTG	GCA	AGC	TCT	GGG	AAC	ATG	AAG	GTC	TTG	CAG	GAG	CCC			
GAC	GAC	GTC	CAC	CGT	TCG	AGA	CCC	TTG	TAC	TTC	CAG	AAC	GTC	CTC	GGG			
Leu	Leu	Gln	Val	Ala	Ser	Ser	Gly	Asn	Met	Lys	Val	Leu	Gln	Glu	Pro>			
100			110				120				130				140			
*		*	*		*		*		*		*		*		*		*	
ACC	TGC	GTC	TCC	GAC	TAC	ATG	AGC	ATC	TCT	ACT	TGC	GAG	TGG	AAG	ATG			
TGG	ACG	CAG	AGG	CTG	ATG	TAC	TCG	TAG	AGA	TGA	ACG	CTC	ACC	TTC	TAC			
Thr	Cys	Val	Ser	Asp	Tyr	Met	Ser	Ile	Ser	Thr	Cys	Glu	Trp	Lys	Met>			
150			160				170				180				190			
*	*		*		*		*		*		*		*		*		*	
AAT	GGT	CCC	ACC	AAT	TGC	AGC	ACC	GAG	CTC	CGC	CTG	TTG	TAC	CAG	CTG			
TTA	CCA	GGG	TGG	TTA	ACG	TCG	TGG	CTC	GAG	GCG	GAC	AAC	ATG	GTC	GAC			
Asn	Gly	Pro	Thr	Asn	Cys	Ser	Thr	Glu	Leu	Arg	Leu	Leu	Tyr	Gln	Leu>			
200			210				220				230				240			
*	*		*		*		*		*		*		*		*		*	
GTT	TTT	CTG	CTC	TCC	GAA	GCC	CAC	ACG	TGT	ATC	CCT	GAG	AAC	AAC	GGA			
CAA	AAA	GAC	GAG	AGG	CTT	CGG	GTG	TGC	ACA	TAG	GGA	CTC	TTG	TTG	CCT			
Val	Phe	Leu	Leu	Ser	Glu	Ala	His	Thr	Cys	Ile	Pro	Glu	Asn	Asn	Gly>			
250			260				270				280							
*	*		*		*		*		*		*		*		*		*	
GGC	GCG	GGG	TGC	GTG	TGC	CAC	CTG	CTC	ATG	GAT	GAC	GTG	GTC	AGT	GCG			
CCG	CGC	CCC	ACG	CAC	ACG	GTG	GAC	GAG	TAC	CTA	CTG	CAC	CAG	TCA	CGC			
Gly	Ala	Gly	Cys	Val	Cys	His	Leu	Leu	Met	Asp	Asp	Val	Val	Ser	Ala>			
290			300				310				320				330			
*	*		*		*		*		*		*		*		*		*	
GAT	AAC	TAT	ACA	CTG	GAC	CTG	TGG	GCT	GGG	CAG	CAG	CTG	CTG	TGG	AAG			
CTA	TTG	ATA	TGT	GAC	CTG	GAC	ACC	CGA	CCC	GTC	GTC	GAC	GAC	ACC	TTC			
Asp	Asn	Tyr	Thr	Leu	Asp	Leu	Trp	Ala	Gly	Gln	Gln	Leu	Leu	Trp	Lys>			
340			350				360				370				380			
*	*		*		*		*		*		*		*		*		*	
GGC	TCC	TTC	AAG	CCC	AGC	GAG	CAT	GTG	AAA	CCC	AGG	GCC	CCA	GGA	AAC			
CCG	AGG	AAG	TTC	GGG	TCG	CTC	GTA	CAC	TTT	GGG	TCC	CGG	GGT	CCT	TTG			
Gly	Ser	Phe	Lys	Pro	Ser	Glu	His	Val	Lys	Pro	Arg	Ala	Pro	Gly	Asn>			

48/63

## Fig.31B.

390	400	410	420	430
* * * * *				
CTG ACA GTT CAC ACC AAT GTC TCC GAC ACT CTG CTG CTG ACC TGG AGC				
GAC TGT CAA GTG TGG TTA CAG AGG CTG TGA GAC GAC GAC TGG ACC TCG				
Leu Thr Val His Thr Asn Val Ser Asp Thr Leu Leu Leu Thr Trp Ser>				
440	450	460	470	480
* * * * *				
AAC CCG TAT CCC CCT GAC AAT TAC CTG TAT AAT CAT CTC ACC TAT GCA				
TTG GGC ATA GGG GGA CTG TTA ATG GAC ATA TTA GTA GAG TGG ATA CGT				
Asn Pro Tyr Pro Pro Asp Asn Tyr Leu Tyr Asn His Leu Thr Tyr Ala>				
490	500	510	520	
* * * * *				
GTC AAC ATT TGG AGT GAA AAC GAC CCG GCA GAT TTC AGA ATC TAT AAC				
CAG TTG TAA ACC TCA CTT TTG CTG GGC CGT CTA AAG TCT TAG ATA TTG				
Val Asn Ile Trp Ser Glu Asn Asp Pro Ala Asp Phe Arg Ile Tyr Asn>				
530	540	550	560	570
* * * * *				
GTG ACC TAC CTA GAA CCC TCC CTC CGC ATC GCA GCC AGC ACC CTG AAG				
CAC TGG ATG GAT CTT GGG AGG GAG GCG TAG CGT CGG TCG TGG GAC TTC				
Val Thr Tyr Leu Glu Pro Ser Leu Arg Ile Ala Ala Ser Thr Leu Lys>				
580	590	600	610	620
* * * * *				
TCT GGG ATT TCC TAC AGG GCA CGG GTG AGG GCC TGG GCT CAG AGC TAT				
AGA CCC TAA AGG ATG TCC CGT GCC CAC TCC CGG ACC CGA GTC TCG ATA				
Ser Gly Ile Ser Tyr Arg Ala Arg Val Arg Ala Trp Ala Gln Ser Tyr>				
630	640	650	660	670
* * * * *				
AAC ACC ACC TGG AGT GAG TGG AGC CCC AGC ACC AAG TGG CAC AAC TCC				
TTG TGG TGG ACC TCA CTC ACC TCG GGG TCG TGG TTC ACC GTG TTG AGG				
Asn Thr Thr Trp Ser Glu Trp Ser Pro Ser Thr Lys Trp His Asn Ser>				
680	690	700	710	720
* * * * *				
TAC AGG GAG CCC TTC GAG CAG TCC GGT GGG GGC GGG GGC GCC GCG CCT				
ATG TCC CTC GGG AAG CTC GTC AGG CCA CCC CCG CCC CCG CGG CGC GGA				
Tyr Arg Glu Pro Phe Glu Gln Ser Gly Gly Gly Gly Gly Ala Ala Pro>				
730	740	750	760	
* * * * *				
ACG GAA ACT CAG CCA CCT GTG ACA AAT TTG AGT GTC TCT GTT GAA AAC				
TGC CTT TGA GTC GGT GGA CAC TGT TTA AAC TCA CAG AGA CAA CTT TTG				
Thr Glu Thr Gln Pro Pro Val Thr Asn Leu Ser Val Ser Val Glu Asn>				



49/63

## Fig.31C.

```

770          780          790          800          810
*            *            *            *            *
CTC TGC ACA GTA ATA TGG ACA TGG AAT CCA CCC GAG GGA GCC AGC TCA
GAG ACG TGT CAT TAT ACC TGT ACC TTA GGT GGG CTC CCT CGG TCG AGT
Leu Cys Thr Val Ile Trp Thr Trp Asn Pro Pro Glu Gly Ala Ser Ser>

      820          830          840          850          860
      *            *            *            *            *
AAT TGT AGT CTA TGG TAT TTT AGT CAT TTT GGC GAC AAA CAA GAT AAG
TTA ACA TCA GAT ACC ATA AAA TCA GTA AAA CCG CTG TTT GTT CTA TTC
Asn Cys Ser Leu Trp Tyr Phe Ser His Phe Gly Asp Lys Gln Asp Lys>

      870          880          890          900          910
*            *            *            *            *
AAA ATA GCT CCG GAA ACT CGT CGT TCA ATA GAA GTA CCC CTG AAT GAG
TTT TAT CGA GGC CTT TGA GCA GCA AGT TAT CTT CAT GGG GAC TTA CTC
Lys Ile Ala Pro Glu Thr Arg Arg Ser Ile Glu Val Pro Leu Asn Glu>

      920          930          940          950          960
*            *            *            *            *
AGG ATT TGT CTG CAA GTG GGG TCC CAG TGT AGC ACC AAT GAG AGT GAG
TCC TAA ACA GAC GTT CAC CCC AGG GTC ACA TCG TGG TTA CTC TCA CTC
Arg Ile Cys Leu Gln Val Gly Ser Gln Cys Ser Thr Asn Glu Ser Glu>

      970          980          990          1000
*            *            *            *            *
AAG CCT AGC ATT TTG GTT GAA AAA TGC ATC TCA CCC CCA GAA GGT GAT
TTC GGA TCG TAA AAC CAA CTT TTT ACG TAG AGT GGG GGT CTT CCA CTA
Lys Pro Ser Ile Leu Val Glu Lys Cys Ile Ser Pro Pro Glu Gly Asp>

1010          1020          1030          1040          1050
*            *            *            *            *
CCT GAG TCT GCT GTG ACT GAG CTT CAA TGC ATT TGG CAC AAC CTG AGC
GGA CTC AGA CGA CAC TGA CTC GAA GTT ACG TAA ACC GTG TTG GAC TCG
Pro Glu Ser Ala Val Thr Glu Leu Gln Cys Ile Trp His Asn Leu Ser>

      1060          1070          1080          1090          1100
*            *            *            *            *
TAC ATG AAG TGT TCT TGG CTC CCT GGA AGG AAT ACC AGT CCC GAC ACT
ATG TAC TTC ACA AGA ACC GAG GGA CCT TCC TTA TGG TCA GGG CTG TGA
Tyr Met Lys Cys Ser Trp Leu Pro Gly Arg Asn Thr Ser Pro Asp Thr>

      1110          1120          1130          1140          1150
*            *            *            *            *
AAC TAT ACT CTC TAC TAT TGG CAC AGA AGC CTG GAA AAA ATT CAT CAA
TTG ATA TGA GAG ATG ATA ACC GTG TCT TCG GAC CTT TTT TAA GTA GTT
Asn Tyr Thr Leu Tyr Tyr Trp His Arg Ser Leu Glu Lys Ile His Gln>

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50/63

## Fig.31D.

1160					1170					1180					1190					1200				
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
TGT	GAA	AAC	ATC	TTT	AGA	GAA	GGC	CAA	TAC	TTT	GGT	TGT	TCC	TTT	GAT	ACA	CTT	TTG	TAG	AAA	TCT	CTT	CCG	GTT
ACA	CTT	TTG	TAG	AAA	TCT	CTT	CCG	GTT	ATG	AAA	CCA	ACA	AGG	AAA	CTA	Cys	Glu	Asn	Ile	Phe	Arg	Glu	Gly	Gln
Cys	Glu	Asn	Ile	Phe	Arg	Glu	Gly	Gln	Tyr	Phe	Gly	Cys	Ser	Phe	Asp>									
1210					1220					1230					1240									
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*					
CTG	ACC	AAA	GTG	AAG	GAT	TCC	AGT	TTT	GAA	CAA	CAC	AGT	GTC	CAA	ATA	GAC	TGG	TTT	CAC	TTC	CTA	AGG	TCA	AAA
GAC	TGG	TTT	CAC	TTC	CTA	AGG	TCA	AAA	CTT	GTT	GTG	TCA	CAG	GTT	TAT	Leu	Thr	Lys	Val	Lys	Asp	Ser	Ser	Phe
Leu	Thr	Lys	Val	Lys	Asp	Ser	Ser	Phe	Glu	Gln	His	Ser	Val	Gln	Ile>									
1250					1260					1270					1280					1290				
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*					
ATG	GTC	AAG	GAT	AAT	GCA	GGA	AAA	ATT	AAA	CCA	TCC	TTC	AAT	ATA	GTG	TAC	CAG	TTC	CTA	TTA	CGT	CCT	TTT	TAA
TAC	CAG	TTC	CTA	TTA	CGT	CCT	TTT	TAA	TTT	GGT	AGG	AAG	TTA	TAT	CAC	Met	Val	Lys	Asp	Asn	Ala	Gly	Lys	Ile
Met	Val	Lys	Asp	Asn	Ala	Gly	Lys	Ile	Lys	Pro	Ser	Phe	Asn	Ile	Val>									
1300					1310					1320					1330					1340				
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*					
CCT	TTA	ACT	TCC	CGT	GTG	AAA	CCT	GAT	CCT	CCA	CAT	ATT	AAA	AAC	CTC	GGA	AAT	TGA	AGG	GCA	CAC	TTT	GGA	CTA
GGA	AAT	TGA	AGG	GCA	CAC	TTT	GGA	CTA	GGA	GGT	GTA	TAA	TTT	TTG	GAG	Pro	Leu	Thr	Ser	Arg	Val	Lys	Pro	Asp
Pro	Leu	Thr	Ser	Arg	Val	Lys	Pro	Asp	Pro	Pro	His	Ile	Lys	Asn	Leu>									
1350					1360					1370					1380					1390				
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*					
TCC	TTC	CAC	AAT	GAT	GAC	CTA	TAT	GTG	CAA	TGG	GAG	AAT	CCA	CAG	AAT	AGG	AAG	GTG	TTA	CTA	CTG	GAT	ATA	CAC
AGG	AAG	GTG	TTA	CTA	CTG	GAT	ATA	CAC	GTT	ACC	CTC	TTA	GGT	GTC	TTA	Ser	Phe	His	Asn	Asp	Asp	Leu	Tyr	Val
Ser	Phe	His	Asn	Asp	Asp	Leu	Tyr	Val	Gln	Trp	Glu	Asn	Pro	Gln	Asn>									
1400					1410					1420					1430					1440				
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*					
TTT	ATT	AGC	AGA	TGC	CTA	TTT	TAT	GAA	GTA	GAA	GTC	AAT	AAC	AGC	CAA	AAA	TAA	TCG	TCT	ACG	GAT	AAA	ATA	CTT
AAA	TAA	TCG	TCT	ACG	GAT	AAA	ATA	CTT	CAT	CTT	CAG	TTA	TTG	TCG	GTT	Phe	Ile	Ser	Arg	Cys	Leu	Phe	Tyr	Glu
Phe	Ile	Ser	Arg	Cys	Leu	Phe	Tyr	Glu	Val	Glu	Val	Asn	Asn	Ser	Gln>									
1450					1460					1470					1480									
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*					
ACT	GAG	ACA	CAT	AAT	GTT	TTC	TAC	GTC	CAA	GAG	GCT	AAA	TGT	GAG	AAT	TGA	CTC	TGT	GTA	TTA	CAA	AAG	ATG	CAG
TGA	CTC	TGT	GTA	TTA	CAA	AAG	ATG	CAG	GTT	CTC	CGA	TTT	ACA	CTC	TTA	Thr	Glu	Thr	His	Asn	Val	Phe	Tyr	Val
Thr	Glu	Thr	His	Asn	Val	Phe	Tyr	Val	Gln	Glu	Ala	Lys	Cys	Glu	Asn>									
1490					1500					1510					1520					1530				
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*					
CCA	GAA	TTT	GAG	AGA	AAT	GTG	GAG	AAT	ACA	TCT	TGT	TTC	ATG	GTC	CCT	GGT	CTT	AAA	CTC	TCT	TTA	CAC	CTC	TTA
GGT	CTT	AAA	CTC	TCT	TTA	CAC	CTC	TTA	TGT	AGA	ACA	AAG	TAC	CAG	GGA	Pro	Glu	Phe	Glu	Arg	Asn	Val	Glu	Asn
Pro	Glu	Phe	Glu	Arg	Asn	Val	Glu	Asn	Thr	Ser	Cys	Phe	Met	Val	Pro>									

51/63

## Fig.31E.

1540	1550	1560	1570	1580
*   *   *	*   *	*   *	*   *	*
GGT GTT CTT CCT GAT ACT TTG AAC ACA GTC AGA ATA AGA GTC AAA ACA				
CCA CAA GAA GGA CTA TGA AAC TTG TGT CAG TCT TAT TCT CAG TTT TGT				
Gly Val Leu Pro Asp Thr Leu Asn Thr Val Arg Ile Arg Val Lys Thr>				
1590	1600	1610	1620	1630
*   *	*   *	*   *	*   *	*
AAT AAG TTA TGC TAT GAG GAT GAC AAA CTC TGG AGT AAT TGG AGC CAA				
TTA TTC AAT ACG ATA CTC CTA CTG TTT GAG ACC TCA TTA ACC TCG GTT				
Asn Lys Leu Cys Tyr Glu Asp Asp Lys Leu Trp Ser Asn Trp Ser Gln>				
1640	1650	1660	1670	1680
*   *	*   *	*   *	*   *	*
GAA ATG AGT ATA GGT AAG AAG CGC AAT TCC ACA ACC GGA GAC AAA ACT				
CTT TAC TCA TAT CCA TTC TTC GCG TTA AGG TGT TGG CCT CTG TTT TGA				
Glu Met Ser Ile Gly Lys Lys Arg Asn Ser Thr Thr Gly Asp Lys Thr>				
1690	1700	1710	1720	
*   *	*   *	*   *	*   *	
CAC ACA TGC CCA CCG TGC CCA GCA CCT GAA CTC CTG GGG GGA CCG TCA				
GTG TGT ACG GGT GGC ACG GGT CGT GGA CTT GAG GAC CCC CCT GGC AGT				
His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser>				
1730	1740	1750	1760	1770
*   *	*   *	*   *	*   *	*
GTC TTC CTC TTC CCC CCA AAA CCC AAG GAC ACC CTC ATG ATC TCC CGG				
CAG AAG GAG AAG GGG GGT TTT GGG TTC CTG TGG GAG TAC TAG AGG GCC				
Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg>				
1780	1790	1800	1810	1820
*   *	*   *	*   *	*   *	*
ACC CCT GAG GTC ACA TGC GTG GTG GTG GAC GTG AGC CAC GAA GAC CCT				
TGG GGA CTC CAG TGT ACG CAC CAC CAC CTG CAC TCG GTG CTT CTG GGA				
Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro>				
1830	1840	1850	1860	1870
*   *	*   *	*   *	*   *	*
GAG GTC AAG TTC AAC TGG TAC GTG GAC GGC GTG GAG GTG CAT AAT GCC				
CTC CAG TTC AAG TTG ACC ATG CAC CTG CCG CAC CTC CAC GTA TTA CGG				
Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala>				
1880	1890	1900	1910	1920
*   *	*   *	*   *	*   *	*
AAG ACA AAG CCG CGG GAG GAG CAG TAC AAC AGC ACG TAC CGT GTG GTC				
TTC TGT TTC GGC GCC CTC CTC GTC ATG TTG TCG TGC ATG GCA CAC CAG				
Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val>				

52/63

## Fig.31F.

			1930				1940				1950				1960			
	*		*		*		*		*		*		*		*		*	
AGC	GTC	CTC	ACC	GTC	CTG	CAC	CAG	GAC	TGG	CTG	AAT	GGC	AAG	GAG	TAC			
TCG	CAG	GAG	TGG	CAG	GAC	GTG	GTC	CTG	ACC	GAC	TTA	CCG	TTC	CTC	ATG			
Ser	Val	Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr>			
1970			1980				1990				2000				2010			
*		*	*		*		*		*		*		*		*		*	
AAG	TGC	AAG	GTC	TCC	AAC	AAA	GCC	CTC	CCA	GCC	CCC	ATC	GAG	AAA	ACC			
TTC	ACG	TTC	CAG	AGG	TTG	TTT	CGG	GAG	GGT	CGG	GGG	TAG	CTC	TTT	TGG			
Lys	Cys	Lys	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr>			
			2020				2030				2040				2050			2060
	*		*		*		*		*		*		*		*		*	
ATC	TCC	AAA	GCC	AAA	GGG	CAG	CCC	CGA	GAA	CCA	CAG	GTG	TAC	ACC	CTG			
TAG	AGG	TTT	CGG	TTT	CCC	GTC	GGG	GCT	CTT	GGT	GTC	CAC	ATG	TGG	GAC			
Ile	Ser	Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu>			
			2070				2080				2090				2100			2110
*	*		*		*		*		*		*		*		*		*	
CCC	CCA	TCC	CGG	GAG	GAG	ATG	ACC	AAG	AAC	CAG	GTC	AGC	CTG	ACC	TGC			
GGG	GGT	AGG	GCC	CTC	CTC	TAC	TGG	TTC	TTG	GTC	CAG	TCG	GAC	TGG	ACG			
Pro	Pro	Ser	Arg	Glu	Glu	Met	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys>			
			2120				2130				2140				2150			2160
*	*		*		*		*		*		*		*		*		*	
CTG	GTC	AAA	GGC	TTC	TAT	CCC	AGC	GAC	ATC	GCC	GTG	GAG	TGG	GAG	AGC			
GAC	CAG	TTT	CCG	AAG	ATA	GGG	TCG	CTG	TAG	CGG	CAC	CTC	ACC	CTC	TCG			
Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser>			
			2170				2180				2190				2200			
*	*		*		*		*		*		*		*		*		*	
AAT	GGG	CAG	CCG	GAG	AAC	AAC	TAC	AAG	ACC	ACG	CCT	CCC	GTG	CTG	GAC			
TTA	CCC	GTC	GGC	CTC	TTG	TTG	ATG	TTC	TGG	TGC	GGA	GGG	CAC	GAC	CTG			
Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp>			
2210			2220				2230				2240				2250			
*	*		*		*		*		*		*		*		*		*	
TCC	GAC	GGC	TCC	TTC	TTC	CTC	TAT	AGC	AAG	CTC	ACC	GTG	GAC	AAG	AGC			
AGG	CTG	CCG	AGG	AAG	AAG	GAG	ATA	TCG	TTC	GAG	TGG	CAC	CTG	TTC	TCG			
Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys	Ser>			
			2260				2270				2280				2290			2300
*	*		*		*		*		*		*		*		*		*	
AGG	TGG	CAG	CAG	GGG	AAC	GTC	TTC	TCA	TGC	TCC	GTG	ATG	CAT	GAG	GCT			
TCC	ACC	GTC	GTC	CCC	TTG	CAG	AAG	AGT	ACG	AGG	CAC	TAC	GTA	CTC	CGA			
Arg	Trp	Gln	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala>			

53/63

## Fig.31G.

2310			2320			2330			2340			2350			
*	*		*	*		*	*		*	*		*	*		
CTG	CAC	AAC	CAC	TAC	ACG	CAG	AAG	AGC	CTC	TCC	CTG	TCT	CCG	GGT	AAA
GAC	GTG	TTG	GTG	ATG	TGC	GTC	TTC	TCG	GAG	AGG	GAC	AGA	GGC	CCA	TTT
Leu	His	Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser	Leu	Ser	Pro	Gly	Lys>

\*  
TGA  
ACT  
\*\*\*>

54/63

## Fig.32A.

```

      10      20      30      40
      *      *      *      *      *
ATG GTG TGG CCG GCG CGG CTC TGC GGG CTG TGG GCG CTG CTG CTC TGC
TAC CAC ACC GGC CGC GCC GAG ACG CCC GAC ACC CGC GAC GAC GAG ACG
Met Val Trp Pro Ala Arg Leu Cys Gly Leu Trp Ala Leu Leu Leu Cys>

50      60      70      80      90
      *      *      *      *      *
GCC GGC GGC GGG GGC GGG GGC GGG GGC GCC GCG CCT ACG GAA ACT CAG
CGG CCG CCG CCC CCG CCC CCG CCC CCG CGG CGC GGA TGC CTT TGA GTC
Ala Gly Gly Gly Gly Gly Gly Gly Gly Gly Ala Ala Pro Thr Glu Thr Gln>

100      110      120      130      140
      *      *      *      *      *
CCA CCT GTG ACA AAT TTG AGT GTC TCT GTT GAA AAC CTC TGC ACA GTA
GGT GGA CAC TGT TTA AAC TCA CAG AGA CAA CTT TTG GAG ACG TGT CAT
Pro Pro Val Thr Asn Leu Ser Val Ser Val Glu Asn Leu Cys Thr Val>

150      160      170      180      190
      *      *      *      *      *
ATA TGG ACA TGG AAT CCA CCC GAG GGA GCC AGC TCA AAT TGT AGT CTA
TAT ACC TGT ACC TTA GGT GGG CTC CCT CGG TCG AGT TTA ACA TCA GAT
Ile Trp Thr Trp Asn Pro Pro Glu Gly Ala Ser Ser Asn Cys Ser Leu>

200      210      220      230      240
      *      *      *      *      *
TGG TAT TTT AGT CAT TTT GGC GAC AAA CAA GAT AAG AAA ATA GCT CCG
ACC ATA AAA TCA GTA AAA CCG CTG TTT GTT CTA TTC TTT TAT CGA GGC
Trp Tyr Phe Ser His Phe Gly Asp Lys Gln Asp Lys Lys Ile Ala Pro>

250      260      270      280
      *      *      *      *      *
GAA ACT CGT CGT TCA ATA GAA GTA CCC CTG AAT GAG AGG ATT TGT CTG
CTT TGA GCA GCA AGT TAT CTT CAT GGG GAC TTA CTC TCC TAA ACA GAC
Glu Thr Arg Arg Ser Ile Glu Val Pro Leu Asn Glu Arg Ile Cys Leu>

290      300      310      320      330
      *      *      *      *      *
CAA GTG GGG TCC CAG TGT AGC ACC AAT GAG AGT GAG AAG CCT AGC ATT
GTT CAC CCC AGG GTC ACA TCG TGG TTA CTC TCA CTC TTC GGA TCG TAA
Gln Val Gly Ser Gln Cys Ser Thr Asn Glu Ser Glu Lys Pro Ser Ile>

340      350      360      370      380
      *      *      *      *      *
TTG GTT GAA AAA TGC ATC TCA CCC CCA GAA GGT GAT CCT GAG TCT GCT
AAC CAA CTT TTT ACG TAG AGT GGG GGT CTT CCA CTA GGA CTC AGA CGA
Leu Val Glu Lys Cys Ile Ser Pro Pro Glu Gly Asp Pro Glu Ser Ala>

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55/63

## Fig.32B.

```

      390          400          410          420          430
      *          *          *          *          *
GTG ACT GAG CTT CAA TGC ATT TGG CAC AAC CTG AGC TAC ATG AAG TGT
CAC TGA CTC GAA GTT ACG TAA ACC GTG TTG GAC TCG ATG TAC TTC ACA
Val Thr Glu Leu Gln Cys Ile Trp His Asn Leu Ser Tyr Met Lys Cys>

      440          450          460          470          480
      *          *          *          *          *
TCT TGG CTC CCT GGA AGG AAT ACC AGT CCC GAC ACT AAC TAT ACT CTC
AGA ACC GAG GGA CCT TCC TTA TGG TCA GGG CTG TGA TTG ATA TGA GAG
Ser Trp Leu Pro Gly Arg Asn Thr Ser Pro Asp Thr Asn Tyr Thr Leu>

      490          500          510          520
      *          *          *          *          *
TAC TAT TGG CAC AGA AGC CTG GAA AAA ATT CAT CAA TGT GAA AAC ATC
ATG ATA ACC GTG TCT TCG GAC CTT TTT TAA GTA GTT ACA CTT TTG TAG
Tyr Tyr Trp His Arg Ser Leu Glu Lys Ile His Gln Cys Glu Asn Ile>

530          540          550          560          570
      *          *          *          *          *
TTT AGA GAA GGC CAA TAC TTT GGT TGT TCC TTT GAT CTG ACC AAA GTG
AAA TCT CTT CCG GTT ATG AAA CCA ACA AGG AAA CTA GAC TGG TTT CAC
Phe Arg Glu Gly Gln Tyr Phe Gly Cys Ser Phe Asp Leu Thr Lys Val>

      580          590          600          610          620
      *          *          *          *          *
AAG GAT TCC AGT TTT GAA CAA CAC AGT GTC CAA ATA ATG GTC AAG GAT
TTC CTA AGG TCA AAA CTT GTT GTG TCA CAG GTT TAT TAC CAG TTC CTA
Lys Asp Ser Ser Phe Glu Gln His Ser Val Gln Ile Met Val Lys Asp>

      630          640          650          660          670
      *          *          *          *          *
AAT GCA GGA AAA ATT AAA CCA TCC TTC AAT ATA GTG CCT TTA ACT TCC
TTA CGT CCT TTT TAA TTT GGT AGG AAG TTA TAT CAC GGA AAT TGA AGG
Asn Ala Gly Lys Ile Lys Pro Ser Phe Asn Ile Val Pro Leu Thr Ser>

      680          690          700          710          720
      *          *          *          *          *
CGT GTG AAA CCT GAT CCT CCA CAT ATT AAA AAC CTC TCC TTC CAC AAT
GCA CAC TTT GGA CTA GGA GGT GTA TAA TTT TTG GAG AGG AAG GTG TTA
Arg Val Lys Pro Asp Pro Pro His Ile Lys Asn Leu Ser Phe His Asn>

      730          740          750          760
      *          *          *          *          *
GAT GAC CTA TAT GTG CAA TGG GAG AAT CCA CAG AAT TTT ATT AGC AGA
CTA CTG GAT ATA CAC GTT ACC CTC TTA GGT GTC TTA AAA TAA TCG TCT
Asp Asp Leu Tyr Val Gln Trp Glu Asn Pro Gln Asn Phe Ile Ser Arg>

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56/63

## Fig.32C.

```

770      780      790      800      810
*        *        *        *        *
TGC CTA TTT TAT GAA GTA GAA GTC AAT AAC AGC CAA ACT GAG ACA CAT
ACG GAT AAA ATA CTT CAT CTT CAG TTA TTG TCG GTT TGA CTC TGT GTA
Cys Leu Phe Tyr Glu Val Glu Val Asn Asn Ser Gln Thr Glu Thr His>

      820      830      840      850      860
*        *        *        *        *
AAT GTT TTC TAC GTC CAA GAG GCT AAA TGT GAG AAT CCA GAA TTT GAG
TTA CAA AAG ATG CAG GTT CTC CGA TTT ACA CTC TTA GGT CTT AAA CTC
Asn Val Phe Tyr Val Gln Glu Ala Lys Cys Glu Asn Pro Glu Phe Glu>

      870      880      890      900      910
*        *        *        *        *
AGA AAT GTG GAG AAT ACA TCT TGT TTC ATG GTC CCT GGT GTT CTT CCT
TCT TTA CAC CTC TTA TGT AGA ACA AAG TAC CAG GGA CCA CAA GAA GGA
Arg Asn Val Glu Asn Thr Ser Cys Phe Met Val Pro Gly Val Leu Pro>

      920      930      940      950      960
*        *        *        *        *
GAT ACT TTG AAC ACA GTC AGA ATA AGA GTC AAA ACA AAT AAG TTA TGC
CTA TGA AAC TTG TGT CAG TCT TAT TCT CAG TTT TGT TTA TTC AAT ACG
Asp Thr Leu Asn Thr Val Arg Ile Arg Val Lys Thr Asn Lys Leu Cys>

      970      980      990      1000
*        *        *        *        *
TAT GAG GAT GAC AAA CTC TGG AGT AAT TGG AGC CAA GAA ATG AGT ATA
ATA CTC CTA CTG TTT GAG ACC TCA TTA ACC TCG GTT CTT TAC TCA TAT
Tyr Glu Asp Asp Lys Leu Trp Ser Asn Trp Ser Gln Glu Met Ser Ile>

1010      1020      1030      1040      1050
*        *        *        *        *
GGT AAG AAG CGC AAT TCC ACA GGC GCG CCT AGT GGT GGA GGT GGC CGG
CCA TTC TTC GCG TTA AGG TGT CCG CGC GGA TCA CCA CCT CCA CCG GCC
Gly Lys Lys Arg Asn Ser Thr Gly Ala Pro Ser Gly Gly Gly Gly Arg>

      1060      1070      1080      1090      1100
*        *        *        *        *
CCC GCA AGC TCT GGG AAC ATG AAG GTC TTG CAG GAG CCC ACC TGC GTC
GGG CGT TCG AGA CCC TTG TAC TTC CAG AAC GTC CTC GGG TGG ACG CAG
Pro Ala Ser Ser Gly Asn Met Lys Val Leu Gln Glu Pro Thr Cys Val>

      1110      1120      1130      1140      1150
*        *        *        *        *
TCC GAC TAC ATG AGC ATC TCT ACT TGC GAG TGG AAG ATG AAT GGT CCC
AGG CTG ATG TAC TCG TAG AGA TGA ACG CTC ACC TTC TAC TTA CCA GGG
Ser Asp Tyr Met Ser Ile Ser Thr Cys Glu Trp Lys Met Asn Gly Pro>

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57/63

## Fig.32D.

1160				1170				1180				1190				1200			
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
ACC	AAT	TGC	AGC	ACC	GAG	CTC	CGC	CTG	TTG	TAC	CAG	CTG	GTT	TTT	CTG				
TGG	TTA	ACG	TCG	TGG	CTC	GAG	GCG	GAC	AAC	ATG	GTC	GAC	CAA	AAA	GAC				
Thr	Asn	Cys	Ser	Thr	Glu	Leu	Arg	Leu	Leu	Tyr	Gln	Leu	Val	Phe	Leu>				
1210				1220				1230				1240							
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
CTC	TCC	GAA	GCC	CAC	ACG	TGT	ATC	CCT	GAG	AAC	AAC	GGA	GGC	GCG	GGG				
GAG	AGG	CTT	CGG	GTG	TGC	ACA	TAG	GGA	CTC	TTG	TTG	CCT	CCG	CGC	CCC				
Leu	Ser	Glu	Ala	His	Thr	Cys	Ile	Pro	Glu	Asn	Asn	Gly	Gly	Ala	Gly>				
1250				1260				1270				1280				1290			
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
TGC	GTG	TGC	CAC	CTG	CTC	ATG	GAT	GAC	GTG	GTC	AGT	GCG	GAT	AAC	TAT				
ACG	CAC	ACG	GTG	GAC	GAG	TAC	CTA	CTG	CAC	CAG	TCA	CGC	CTA	TTG	ATA				
Cys	Val	Cys	His	Leu	Leu	Met	Asp	Asp	Val	Val	Ser	Ala	Asp	Asn	Tyr>				
1300				1310				1320				1330				1340			
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
ACA	CTG	GAC	CTG	TGG	GCT	GGG	CAG	CAG	CTG	CTG	TGG	AAG	GGC	TCC	TTC				
TGT	GAC	CTG	GAC	ACC	CGA	CCC	GTC	GTC	GAC	GAC	ACC	TTC	CCG	AGG	AAG				
Thr	Leu	Asp	Leu	Trp	Ala	Gly	Gln	Gln	Leu	Leu	Trp	Lys	Gly	Ser	Phe>				
1350				1360				1370				1380				1390			
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
AAG	CCC	AGC	GAG	CAT	GTG	AAA	CCC	AGG	GCC	CCA	GGA	AAC	CTG	ACA	GTT				
TTC	GGG	TCG	CTC	GTA	CAC	TTT	GGG	TCC	CGG	GGT	CCT	TTG	GAC	TGT	CAA				
Lys	Pro	Ser	Glu	His	Val	Lys	Pro	Arg	Ala	Pro	Gly	Asn	Leu	Thr	Val>				
1400				1410				1420				1430				1440			
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
CAC	ACC	AAT	GTC	TCC	GAC	ACT	CTG	CTG	CTG	ACC	TGG	AGC	AAC	CCG	TAT				
GTG	TGG	TTA	CAG	AGG	CTG	TGA	GAC	GAC	GAC	TGG	ACC	TCG	TTG	GGC	ATA				
His	Thr	Asn	Val	Ser	Asp	Thr	Leu	Leu	Leu	Thr	Trp	Ser	Asn	Pro	Tyr>				
1450				1460				1470				1480							
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
CCC	CCT	GAC	AAT	TAC	CTG	TAT	AAT	CAT	CTC	ACC	TAT	GCA	GTC	AAC	ATT				
GGG	GGA	CTG	TTA	ATG	GAC	ATA	TTA	GTA	GAG	TGG	ATA	CGT	CAG	TTG	TAA				
Pro	Pro	Asp	Asn	Tyr	Leu	Tyr	Asn	His	Leu	Thr	Tyr	Ala	Val	Asn	Ile>				
1490				1500				1510				1520				1530			
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
TGG	AGT	GAA	AAC	GAC	CCG	GCA	GAT	TTC	AGA	ATC	TAT	AAC	GTG	ACC	TAC				
ACC	TCA	CTT	TTG	CTG	GGC	CGT	CTA	AAG	TCT	TAG	ATA	TTG	CAC	TGG	ATG				
Trp	Ser	Glu	Asn	Asp	Pro	Ala	Asp	Phe	Arg	Ile	Tyr	Asn	Val	Thr	Tyr>				

58/63

## Fig.32E.

1540		1550		1560		1570		1580
*        *		*        *		*        *		*        *		*        *
CTA GAA CCC TCC CTC CGC ATC GCA GCC AGC ACC CTG AAG TCT GGG ATT								
GAT CTT GGG AGG GAG GCG TAG CGT CGG TCG TGG GAC TTC AGA CCC TAA								
Leu Glu Pro Ser Leu Arg Ile Ala Ala Ser Thr Leu Lys Ser Gly Ile>								
1590		1600		1610		1620		1630
*        *		*        *		*        *		*        *		*        *
TCC TAC AGG GCA CGG GTG AGG GCC TGG GCT CAG TGC TAT AAC ACC ACC								
AGG ATG TCC CGT GCC CAC TCC CGG ACC CGA GTC ACG ATA TTG TGG TGG								
Ser Tyr Arg Ala Arg Val Arg Ala Trp Ala Gln Cys Tyr Asn Thr Thr>								
1640		1650		1660		1670		1680
*        *		*        *		*        *		*        *		*        *
TGG AGT GAG TGG AGC CCC AGC ACC AAG TGG CAC AAC TCC TAC AGG GAG								
ACC TCA CTC ACC TCG GGG TCG TGG TTC ACC GTG TTG AGG ATG TCC CTC								
Trp Ser Glu Trp Ser Pro Ser Thr Lys Trp His Asn Ser Tyr Arg Glu>								
1690		1700		1710		1720		
*        *		*        *		*        *		*        *		
CCC TTC GAG CAG TCC GGA GAC AAA ACT CAC ACA TGC CCA CCG TGC CCA								
GGG AAG CTC GTC AGG CCT CTG TTT TGA GTG TGT ACG GGT GGC ACG GGT								
Pro Phe Glu Gln Ser Gly Asp Lys Thr His Thr Cys Pro Pro Cys Pro>								
1730		1740		1750		1760		1770
*        *		*        *		*        *		*        *		*        *
GCA CCT GAA CTC CTG GGG GGA CCG TCA GTC TTC CTC TTC CCC CCA AAA								
CGT GGA CTT GAG GAC CCC CCT GGC AGT CAG AAG GAG AAG GGG GGT TTT								
Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys>								
1780		1790		1800		1810		1820
*        *		*        *		*        *		*        *		*        *
CCC AAG GAC ACC CTC ATG ATC TCC CGG ACC CCT GAG GTC ACA TGC GTG								
GGG TTC CTG TGG GAG TAC TAG AGG GCC TGG GGA CTC CAG TGT ACG CAC								
Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val>								
1830		1840		1850		1860		1870
*        *		*        *		*        *		*        *		*        *
GTG GTG GAC GTG AGC CAC GAA GAC CCT GAG GTC AAG TTC AAC TGG TAC								
CAC CAC CTG CAC TCG GTG CTT CTG GGA CTC CAG TTC AAG TTG ACC ATG								
Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr>								
1880		1890		1900		1910		1920
*        *		*        *		*        *		*        *		*        *
GTG GAC GGC GTG GAG GTG CAT AAT GCC AAG ACA AAG CCG CGG GAG GAG								
CAC CTG CCG CAC CTC CAC GTA TTA CGG TTC TGT TTC GGC GCC CTC CTC								
Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu>								

59/63

## Fig.32F.

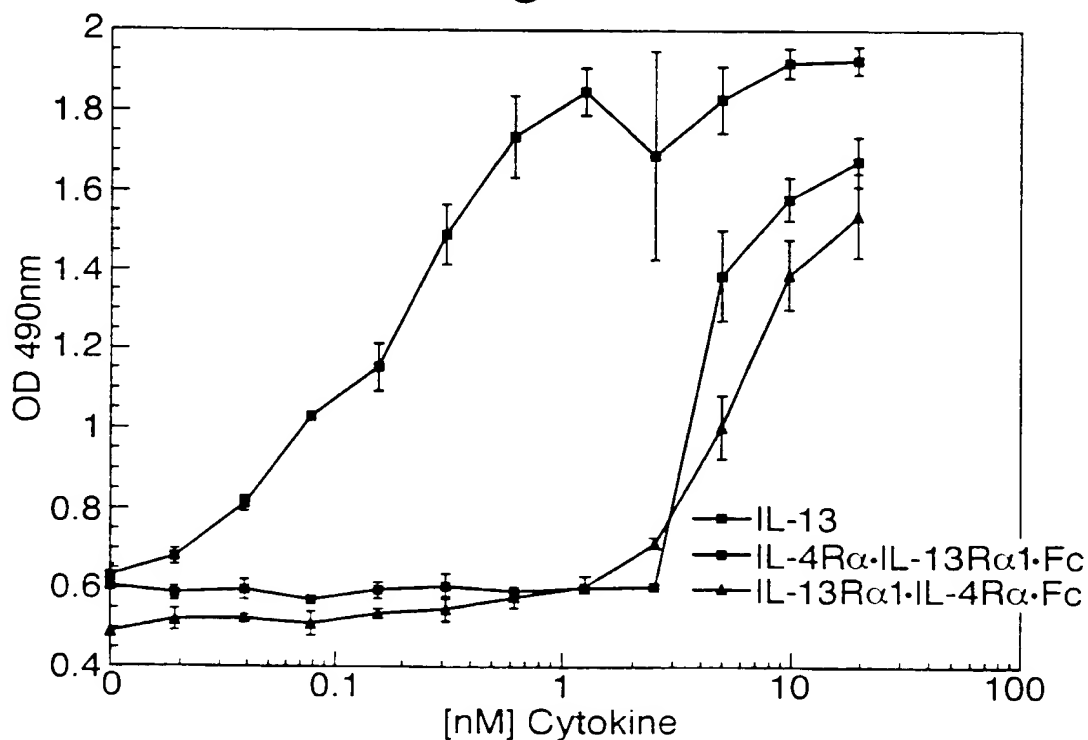
		1930			1940			1950			1960					
	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	CAG	TAC	AAC	AGC	ACG	TAC	CGT	GTG	GTC	AGC	GTC	CTC	ACC	GTC	CTG	CAC
	GTC	ATG	TTG	TCG	TGC	ATG	GCA	CAC	CAG	TCG	CAG	GAG	TGG	CAG	GAC	GTG
	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	Val	Leu	His>
1970																
	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	CAG	GAC	TGG	CTG	AAT	GGC	AAG	GAG	TAC	AAG	TGC	AAG	GTC	TCC	AAC	AAA
	GTC	CTG	ACC	GAC	TTA	CCG	TTC	CTC	ATG	TTC	ACG	TTC	CAG	AGG	TTG	TTT
	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys>
	2020				2030				2040				2050			2060
	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	GCC	CTC	CCA	GCC	CCC	ATC	GAG	AAA	ACC	ATC	TCC	AAA	GCC	AAA	GGG	CAG
	CGG	GAG	GGT	CGG	GGG	TAG	CTC	TTT	TGG	TAG	AGG	TTT	CGG	TTT	CCC	GTC
	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln>
	2070				2080				2090				2100			2110
	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	CCC	CGA	GAA	CCA	CAG	GTG	TAC	ACC	CTG	CCC	CCA	TCC	CGG	GAG	GAG	ATG
	GGG	GCT	CTT	GGT	GTC	CAC	ATG	TGG	GAC	GGG	GGT	AGG	GCC	CTC	CTC	TAC
	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	Pro	Ser	Arg	Glu	Glu	Met>
	2120				2130				2140				2150			2160
	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	ACC	AAG	AAC	CAG	GTC	AGC	CTG	ACC	TGC	CTG	GTC	AAA	GGC	TTC	TAT	CCC
	TGG	TTC	TTG	GTC	CAG	TCG	GAC	TGG	ACG	GAC	CAG	TTT	CCG	AAG	ATA	GGG
	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro>
	2170				2180				2190				2200			
	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	AGC	GAC	ATC	GCC	GTG	GAG	TGG	GAG	AGC	AAT	GGG	CAG	CCG	GAG	AAC	AAC
	TCG	CTG	TAG	CGG	CAC	CTC	ACC	CTC	TCG	TTA	CCC	GTC	GGC	CTC	TTG	TTG
	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn>
2210					2220				2230				2240			2250
	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	TAC	AAG	ACC	ACG	CCT	CCC	GTG	CTG	GAC	TCC	GAC	GGC	TCC	TTC	TTC	CTC
	ATG	TTC	TGG	TGC	GGA	GGG	CAC	GAC	CTG	AGG	CTG	CCG	AGG	AAG	AAG	GAG
	Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu>
	2260				2270				2280				2290			2300
	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	TAT	AGC	AAG	CTC	ACC	GTG	GAC	AAG	AGC	AGG	TGG	CAG	CAG	GGG	AAC	GTC
	ATA	TCG	TTC	GAG	TGG	CAC	CTG	TTC	TCG	TCC	ACC	GTC	GTC	CCC	TTG	CAG
	Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys	Ser	Arg	Trp	Gln	Gln	Gly	Asn	Val>

60/63

Fig.32G.

2310			2320			2330			2340			2350			
*	*		*	*		*	*		*	*		*	*		
TTC	TCA	TGC	TCC	GTG	ATG	CAT	GAG	GCT	CTG	CAC	AAC	CAC	TAC		
AAG	AGT	ACG	AGG	CAC	TAC	GTA	CTC	CGA	GAC	GTG	TTG	GTG	ATG		
Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu	His	Asn	His	Tyr		
2360			2370			2380									
*	*		*	*		*	*								
AAG	AGC	CTC	TCC	CTG	TCT	CCG	GGT	AAA	TGA						
TTC	TCG	GAG	AGG	GAC	AGA	GGC	CCA	TTT	ACT						
Lys	Ser	Leu	Ser	Leu	Ser	Pro	Gly	Lys	***>						

Fig.33.



61/63

Fig.34.

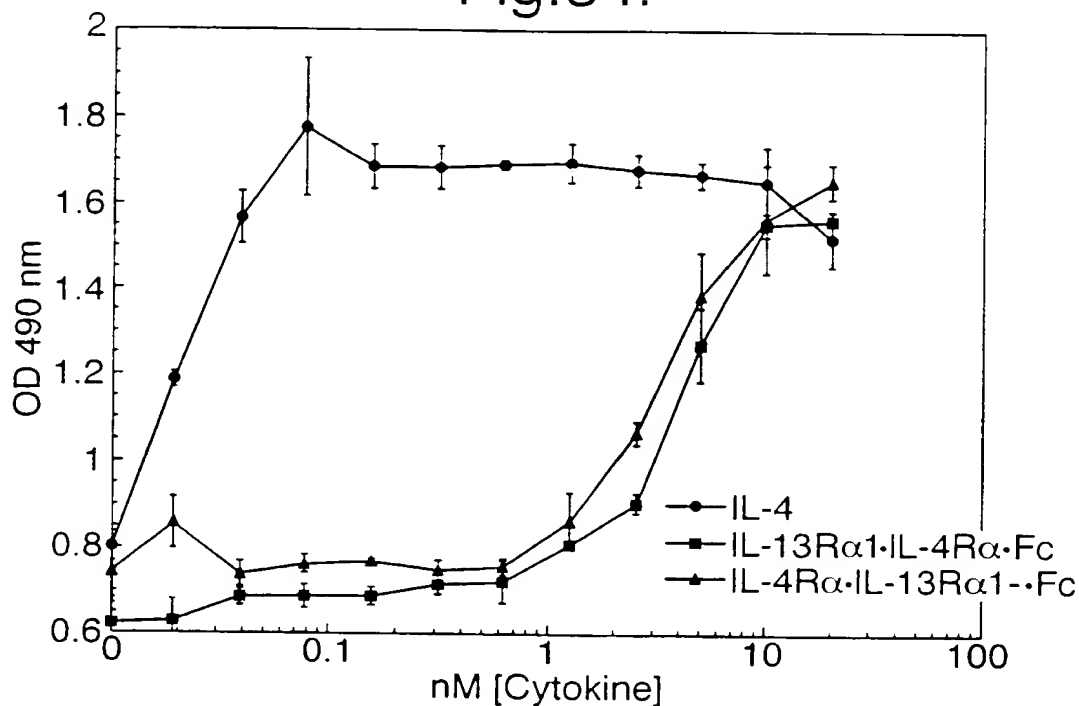
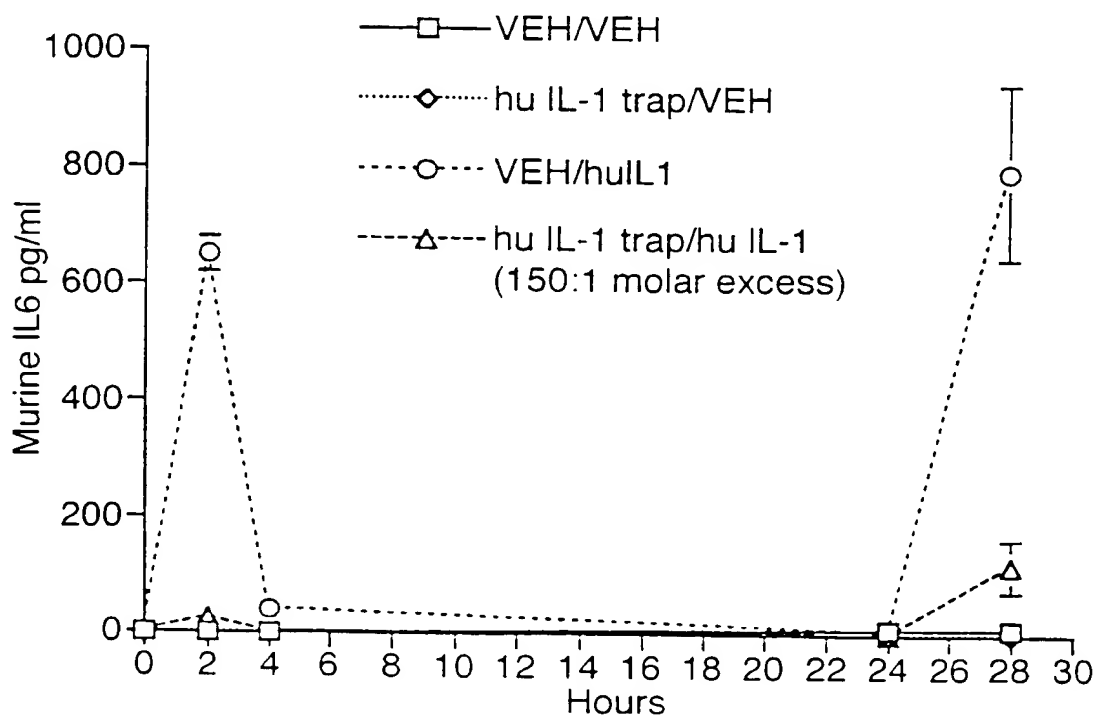


Fig.35.



62/63

Fig.36A.

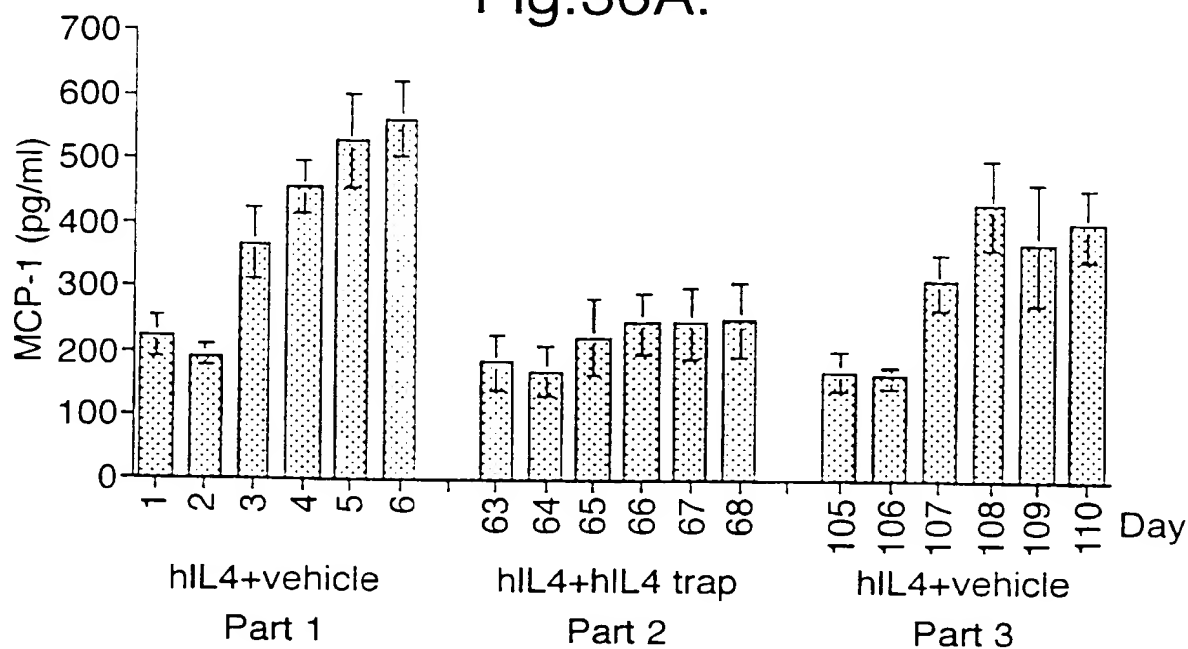
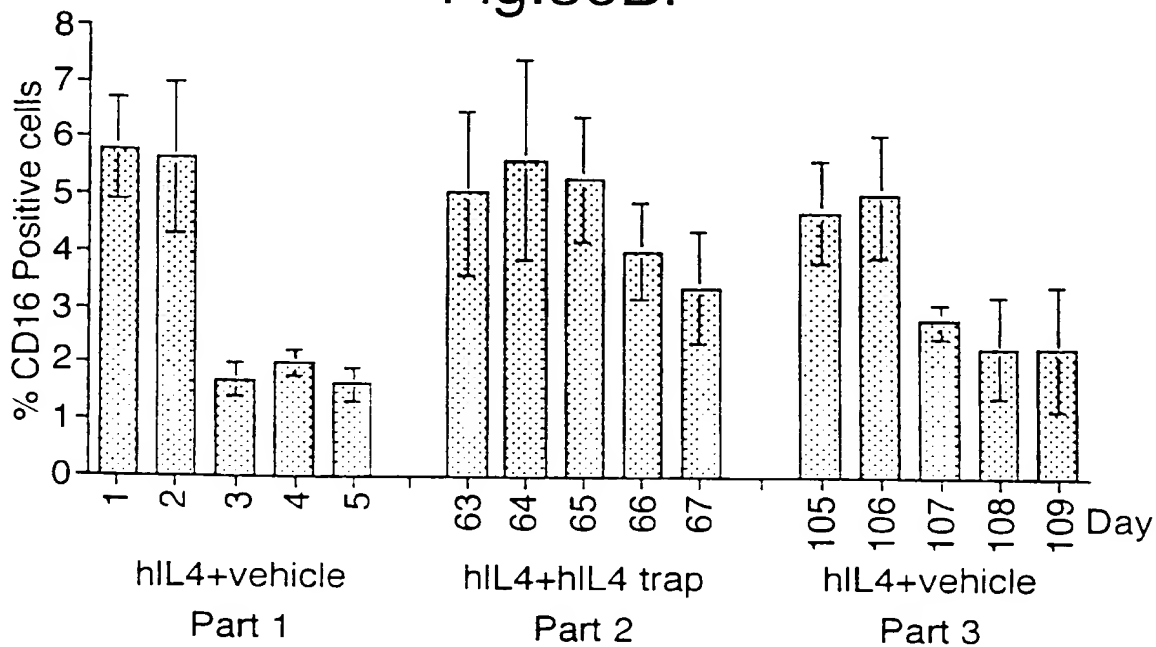


Fig.36B.



63/63

Fig.37.

